

# Assessing Data Quality: Online Appendix

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## Appendix Summary

This appendix provides supplementary information and additional analysis to accompany the article *Assessing Data Quality: An Approach and An Application*. Section 1 includes the wording of the V-Dem corruption questions and their answer categories posed to the expert respondents. Section 2 displays a table of information (parent organization, data source, years of data, corrupt actors) about alternative corruption measures. Section 3 supplements the limited exploratory factor analysis in the content validity assessment included in the main text. In this section of the appendix, we examine the fit of our one-factor model and a number of alternative specifications using frequentist confirmatory factor analysis (CFA) techniques. Section 4 expands on the discussion about correlated errors across the V-Dem corruption measures included in Section 4.2 of the main text about “Data Sources.” Section 5 supplements the discussion in Section 4.2 of the main text regarding “Coverage Across Countries and Time” to consider what we can learn about trends in corruption levels over time using the V-Dem corruption measures, and evaluate these measures’ susceptibility to media reporting bias. In sections 6 and 7, we replicate the analysis presented in Tables 3, 4, and 5 of the paper for each individual V-Dem corruption measure. Finally, Section 8 applies the qualitative case study approach mentioned in Section 4.3 of the main text to the cases of Georgia and Spain.

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# 1 V-Dem Corruption Measures

Table 1: V-Dem Corruption Measures

INDICATOR	QUESTION	CATEGORIES
<b>v2exbribe</b> Executive bribery and corrupt exchanges	How routinely do members of the executive (the head of state, the head of government, and cabinet ministers), or their agents, grant favors in exchange for bribes, kickbacks, or other material inducements?	0: It is routine and expected. 1: It happens more often than not in dealings with the executive. 2: It happens but is unpredictable: those dealing with the executive find it hard to predict when an inducement will be necessary. 3: It happens occasionally but is not expected. 4: It never, or hardly ever, happens.
<b>v2exembez</b> Executive embezzlement and theft	How often do members of the executive (the head of state, the head of government, and cabinet ministers), or their agents, steal, embezzle, or misappropriate public funds or other state resources for personal or family use?	0: Constantly. Act as though all public resources were their personal or family property. 1: Often. Responsible stewards of selected public resources but treat the rest like personal property. 2: About half the time. About as likely to be responsible stewards of selected public resources as they are to treat them like personal property. 3: Occasionally. Responsible stewards of most public resources but treat selected others like personal property. 4: Never, or hardly ever. Almost always responsible stewards of public resources and keep them separate from personal or family property.
<b>v2excrptps</b> Public sector corrupt exchanges	How routinely do public sector employees grant favors in exchange for bribes, kickbacks, or other material inducements?  Clarification: When responding to this question, we would like you to think about a typical person employed by the public sector, excluding the military. If you think there are large discrepancies between the branches of the public sector, between the national/federal and subnational/state level, or between the core bureaucracy and employees working with public service delivery, please try to average them out before stating your response.	0: Constantly. Act as though all public resources were their personal or family property. 1: Often. Responsible stewards of selected public resources but treat the rest like personal property. 2: About half the time. About as likely to be responsible stewards of selected public resources as they are to treat them like personal property. 3: Occasionally. Responsible stewards of most public resources but treat selected others like personal property. 4: Never, or hardly ever. Almost always responsible stewards of public resources and keep them separate from personal or family property.
<b>v2exthftps</b> Public sector theft	How often do public sector employees steal, embezzle, or misappropriate public funds or other state resources for personal or family use?  Clarification: When responding to this question, we would like you to think about a typical person employed by the public sector, excluding the military. If you think there are large discrepancies between branches of the public sector, between the national/federal and subnational/state level, or between the core bureaucracy and employees working with public service delivery, please try to average them out before stating your response.	0: Constantly. Act as though all public resources were their personal/family property. 1: Often. Responsible stewards of selected public resources but treat the rest like personal property. 2: About half the time. About as likely to be responsible stewards of selected public resources as they are to treat them like personal property. 3: Occasionally. Responsible stewards of most public resources but treat selected others like personal property. 4: Never, or hardly ever. Almost always responsible stewards of public resources and keep them separate from personal or family property.
<b>v2lgcrpt</b> Legislature corrupt activities	Do members of the legislature abuse their position for financial gain?  Clarification: This includes any of the following: (a) accepting bribes, (b) helping to obtain government contracts for firms that the legislator (or his/her family/friends/political supporters) own, (c) doing favors for firms in exchange for the opportunity of employment after leaving the legislature, (d) stealing money from the state or from campaign donations for personal use.	0: Commonly. Most legislators probably engage in these activities. 1: Often. Many legislators probably engage in these activities. 2: Sometimes. Some legislators probably engage in these activities. 3: Very occasionally. May be a few but the vast majority do not. 4: Never, or hardly ever.
<b>v2jucorrdc</b> Judicial corruption decision	How often do individuals or businesses make undocumented extra payments or bribes in order to speed up or delay the process or to obtain a favorable judicial decision?	0: Always. 1: Usually. 2: About half of the time. 3: Not usually. 4: Never.

## 2 Alternative Corruption Measures

Table 2: Alternative Corruption Measures

<b>Measure Name</b>	WGI Control of Corruption (WGI)	TI of Corruption Perceptions Index (CPI)	Corruption Index	International Country Risk Guide	World Business Environment Survey	Global Corruption Barometer	Barometers	World Values Survey
<b>Parent Organization</b>	World Bank	Transparency International	Political Risk Services	World Bank	Transparency International	<i>N/A</i>	<i>N/A</i>	
<b>Data Sources</b>	Surveys of households and firms, data from NGOs, public data	Other governance and business climate ratings and surveys	ICRG correspondents and staff	Survey of firms	Survey of households	Survey of households	Survey of households	
<b>Years of Data</b>	1996-present	1995-present, but not comparable over time pre-2012	1984-present	1999-2000	2003-2007, 2009, 2010-2011, 2013	Varies by region	1995-1998, 2010-present	
<b>Corrupt Actors</b>	Government officials, elites, private interests	Public sector	“Political system”	Bureaucracy	Public sector and private “big interests”	Public sector; included public offices vary by year and region	Public sector, elections	

### 3 Factor Analysis

We report a limited exploratory factor analysis in the content validity portion of the main text. Here we use examine the fit of our one-factor model, and a number of alternative specifications, using frequentist confirmatory factor analysis (CFA) techniques.

The analysis in the main text posits a simple one-factor model where each of the six V-Dem corruption indicators reflect, or are caused by, an underlying factor of corruption. As we note in the main text, this assumption may be too strong because our indicators measure corruption across multiple branches of government and focus, to differing degrees, on bribery and embezzlement (and related activities) in their question wordings. Confirmatory factor analysis allows us to test the hypothesis that these indicators are all reflective of a single factor.

Table 3 presents a frequentist replication of the model presented in the main text, fit to posterior medians of the indicators. Note that the loadings and uniqueness values are similar across the frequentist and Bayesian approaches. Because the model is over-identified, we can use common CFA fit statistics to evaluate how well this 1-factor model represents the data. In particular, the Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) are commonly used fit statistics. Analysts use rules of thumb—there is some disagreement on this score but models with  $TLI > 0.95$ ,  $RMSEA < 0.05$ , and  $SRMR < 0.08$  are considered to fit the data well, and an  $RMSEA < 0.1$  is often considered consistent with adequate fit. Here the fit statistics are largely consistent with good fit (TLI and SRMR), although the RMSEA is above the threshold for adequate fit. Because individual fit tests can be unreliable, and it can be difficult to decide whether or not to reject a model that fails one test but not another, Hu & Bentler (1999) argue that rejecting models that fail the combined cutoff rules of either  $TLI < 0.95$  and  $SRMR > 0.09$  or  $RMSEA > 0.06$  and  $SRMR > 0.09$  yields best combined Type I and II error rates. The one-factor model survives both of these tests. Furthermore, recent work finds that the SRMR generally outperforms the RMSEA as an absolute measure

Table 3: One-Factor/Six-Indicator CFA

Measure	Variable	Loadings ( $\Lambda$ )	Uniqueness ( $\Psi$ )
Executive Bribery	<b>v2exbribe</b>	0.91	0.18
Executive Embezzlement	<b>v2exembez</b>	0.89	0.21
Public Sector Bribery	<b>v2excrptps</b>	0.91	0.18
Public Sector Embezzlement	<b>v2exthftps</b>	0.91	0.16
Legislative Bribery/Theft	<b>v2lgcrrpt</b>	0.78	0.39
Judicial Bribery	<b>v2jucorrdc</b>	0.82	0.33
Fit Statistic	Score		
TLI	0.96		
RMSEA	0.13		
SRMR	0.02		

of model fit (Maydeu-Olivares, Shi & Rosseel 2018).

While a Bayesian two-dimensional factor analysis predicts little additional variance, compared to a one-factor model, we also explicitly tested the possibility that a two-factor model—assuming the bribery indicators (including legislative corruption) load on one dimension and the embezzlement indicators on another—better fits the data than our one-factor formulation, within a CFA framework. We fail to reject the null that the one-factor model explains the data best. We do reject the null when we compare our one-dimensional model to one in which the executive survey item load on one dimension and the legislative and judicial items on another, but the improvement in model fit is small (1-dim BIC=261315, 2-dim BIC=261152, a difference of less than one tenth of one percent), and the two factors have a covariance of 0.97, so the practical differences between these two models are miniscule.



## 4 Respondent-Related Errors

V-Dem respondents complete surveys of questions, often more than one. Therefore, the same respondents are likely to provide information about multiple corruption questions. This is especially true of the questions on executive-level corruption because they appear on a single survey. But it is not too uncommon for experts to code combinations of the executive, judicial, and legislative surveys for their country of expertise. As we argue in the main text, this may be a weakness of the V-Dem data generation process, because correlated errors can inflate relationships between V-Dem variables, to an extent unwarranted by the latent variables that these measures attempt to capture. As we argue in the main text, this potential means it can be unwise to place V-Dem variables, including the corruption variables, on both sides of a regression equation. It might also mean that some of the covariance in our factor analytic analysis stems from correlated respondent errors, rather than strong reflection of an underlying factor. Here we examine the extent to which respondent-related errors are likely to contaminate the V-Dem corruption measures.

As a first step we look at raw errors in rater scores. Specifically, using version 10 of the V-Dem dataset, we calculate average codings for the raw survey scales for each of the six measures and calculate the average deviation from those scores for each rater. Table 4 shows the pairwise-complete correlations between raw rater errors across the six scores. These correlations are quite high, often in the 0.5 to 0.7 range. As a first cut, this is worrying.

Nonetheless, correlations in rater errors can stem from both systematic and stochastic

Table 4: Raw Respondent Error Correlations

	v2exbribe	v2excrptps	v2exembez	v2exthftps	v2jucorrdc	v2lgcrprt
v2exbribe	1.00	0.52	0.64	0.51	0.28	0.40
v2excrptps	0.52	1.00	0.57	0.69	0.29	0.42
v2exembez	0.64	0.57	1.00	0.63	0.26	0.40
v2exthftps	0.51	0.69	0.63	1.00	0.27	0.37
v2jucorrdc	0.28	0.29	0.26	0.27	1.00	0.23
v2lgcrprt	0.40	0.42	0.40	0.37	0.23	1.00

sources. Generally, when we use the term, we are thinking about stochastic errors—a rater who accidentally gives Chile too high a score on executive bribery may make a similar random mistake with respect to executive embezzlement. But a likely driver of correlated error here is differential item functioning (DIF). In particular, raters with higher standards will tend to apply those same high standards to every item they score. The V-Dem measurement modeling framework explicitly models and adjusts for this sort of DIF when aggregating expert ratings. Therefore, to know if correlated errors are likely to contaminate V-Dem, we need to look at correlated errors in model-corrected scores, or what Johnson & Albert (1999) call rater “perceptions” (these perceptions are the same model-corrected scores that we use to conduct much of the analysis in the main text). Again using version 10 of the V-Dem data, we calculate these perceptions from the posterior samples of parameters that V-Dem’s ordinal item response theory (IRT) model simulates for each indicator.

Specifically, for each rater  $r$ , and each observation  $i$ , the model simulates from the posterior distributions of the latent traits  $z_i$ , rater discrimination parameters  $\beta_r$ , and rater thresholds for categories on the latent scale (a  $K$ -vector holding elements  $\gamma_{r,k}$ , where the rater answers a survey item with  $K + 1$  categories). These  $\gamma$  thresholds help adjust for DIF, by estimating how raters map their *perceptions* of the latent scale onto item response categories. Conditional on these simulated values, each rater perception,  $t_{ir}$  is distributed normally with mean  $z_i$  and variance  $\frac{1}{\beta_r}$ , truncated to the region  $(\frac{\gamma_{r,y_{ir}-1}}{\beta_r}, \frac{\gamma_{r,y_{ir}}}{\beta_r})$ , where  $y_{ir}$  is rater  $r$ ’s likert response for observation  $i$ . See chapter four of Johnson & Albert (1999) and Pemstein, Marquardt, Tzelgov, Wang, Medzihorsky, Krusell, Miri & von Römer (2020) for more details.

We use these “perception” estimates to replicate the raw respondent-error correlation analysis as above, substituting model corrected scores on the latent scale for raw codings. After correcting for DIF, we find substantially lower correlations in respondent errors across variables. Table 5 shows that, after correcting for DIF, few errors correlate above 0.1 across measures. Nonetheless, we see some remaining evidence of correlated errors within the execu-

Table 5: Model Adjusted Respondent Error Correlations

	v2exbribe	v2excrtps	v2exembez	v2exthtps	v2jucorrdc	v2lgcrpt
v2exbribe	1.00	0.12	0.36	0.14	0.04	0.06
v2excrtps	0.12	1.00	0.29	0.35	0.06	0.07
v2exembez	0.36	0.29	1.00	0.20	0.05	0.11
v2exthtps	0.14	0.35	0.20	1.00	0.08	0.06
v2jucorrdc	0.04	0.06	0.05	0.08	1.00	0.10
v2lgcrpt	0.06	0.07	0.11	0.06	0.10	1.00

tive survey measures, ranging from 0.12 to 0.36. Thus some caution—especially with analyses that use V-Dem executive corruption measures to predict one another—is warranted.

## 5 Corruption Over Time

In this section, we consider what we can learn about trends in corruption levels over time using the V-Dem corruption measures. According to the V-Dem Corruption Index, corruption levels have risen globally since at least the 1960s, with a peak just around the time when corruption appeared on the global reform agenda (Figure 1).<sup>1</sup> The world thus looks much more corrupt today than it did 100 or 60 years ago. Yet, since 2000, V-Dem data indicate worldwide corruption slightly declined.

We think the global surge in corruption over the latter half of the 20th century makes intuitive sense. First, the world economy is more monetized than it was half a century ago, leading one to expect higher corruption levels. Second, the collapse of the Soviet economies in the early 1990s, as well as a global rise of libertarian values, has led to a flurry of privatization reforms, also known to increase levels of corruption. Finally, the number of hybrid regimes rose (Teorell & Hadenius 2007), and we know from previous studies that corruption peaks in countries at the crossroads between authoritarianism and democracy (Montinola & Jackman 2002, Sung 2004, Treisman 2007, Bäck & Hadenius 2008, Rock 2009, Charron & Lapuente 2010, McMann, Seim, Teorell & Lindberg 2019).

Reporting bias cannot completely account for this trend. Two pieces of evidence challenge the interpretation that the perceived increase reflects greater media reporting about corruption in the mid-1990s, relative to earlier eras. The first is the downward trend we observe from around the year of 2000, since there is no reason to expect the media to have reported less on corruption during the last decade. Second, in the dotted line in Figure 1 we present the aggregate trend in corruption levels for a sub-sample of all country years where there, according to the Whitten-Woodring & Van Belle (2014) measure, there was no media freedom. If reporting bias was driving the upward trend, we should expect a flat line (or perhaps even a decline) in countries where reporting was severely restricted. Although a more

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<sup>1</sup>Note that the drop in corruption level right after 1900 is likely driven by shifts in the sample of countries included the V-Dem dataset.

corrupt sub-sample overall, and only covering the post-WWII period, the two trendlines generally parallel each other.

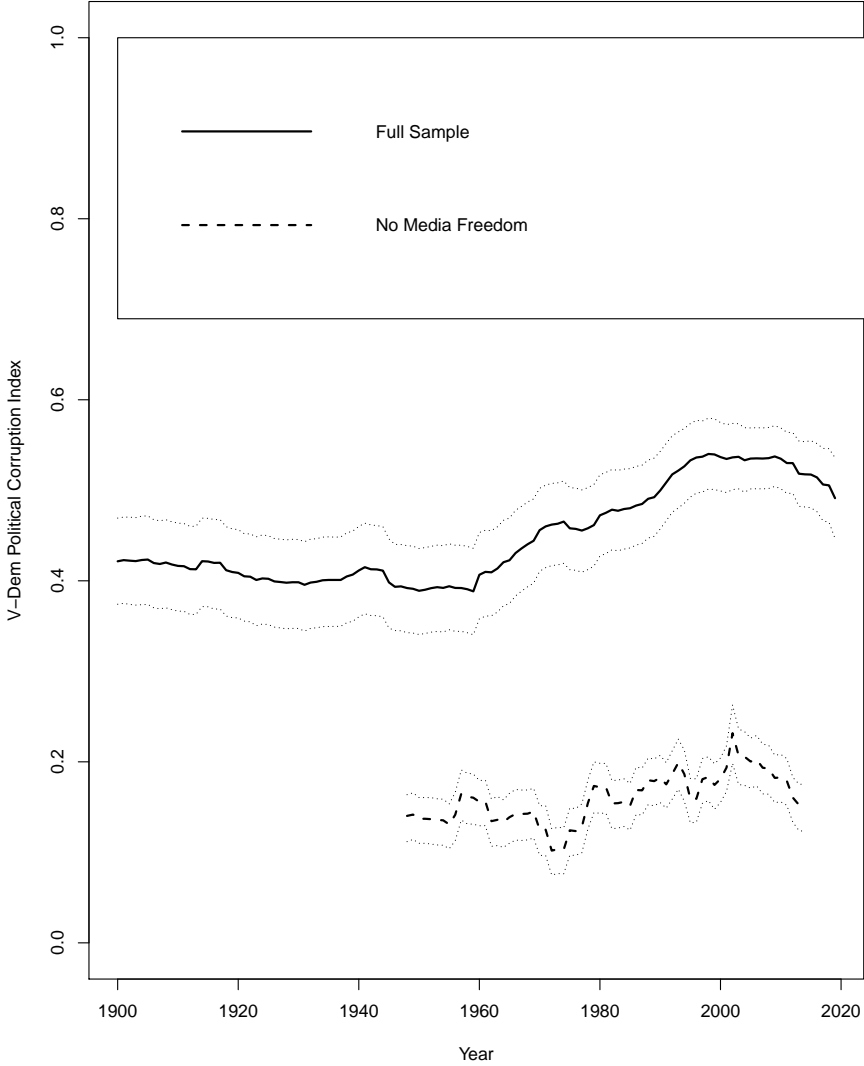


Figure 1: Global Levels of Corruption, 1900-2012

## 6 Examining Respondent Disagreement and Biases by Corruption Measure

Table 6 extends the analysis from Table 3 in the paper to examine the correlates of respondent disagreement for each corruption indicator (Models 1-6) in addition to the corruption index (Model 7). As can be seen, the year variable is only significant for two of the indicators, and with opposite signs, which provides insight as to why it is not significant in the pooled model.

Table 7 extends our test for “situational closeness” from Table 4 in the paper. The respondent-country characteristics interactions are not significant for any of the individual indicators.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Exec. Bribery	Exec. Theft	Pub. Bribery	Pub. Theft	Legisl. Corr.	Jud. Bribery	Pooled
Century	0.002 (0.014)	0.049 (0.025)	-0.002 (0.013)	0.017 (0.022)	0.018 (0.013)	-0.031 (0.014)	-0.001 (0.007)
Freedom of Expression	-0.052 (0.015)	-0.042 (0.030)	-0.054 (0.018)	-0.055 (0.023)	-0.012 (0.015)	-0.017 (0.022)	-0.039 (0.009)
Level of Corruption	0.010 (0.004)	-0.001 (0.010)	-0.001 (0.006)	-0.013 (0.008)	0.000 (0.005)	-0.015 (0.008)	-0.003 (0.003)
Level of Corruption <sup>2</sup>	-0.051 (0.005)	-0.013 (0.008)	-0.053 (0.004)	-0.031 (0.005)	-0.033 (0.005)	-0.048 (0.007)	-0.042 (0.003)
Number of Respondents	0.006 (0.003)	-0.000 (0.007)	-0.002 (0.004)	-0.000 (0.004)	0.002 (0.003)	0.003 (0.003)	0.001 (0.002)
Adjusted R-squared	0.321	0.050	0.247	0.184	0.129	0.344	0.234
No. Countries	173	118	168	163	161	169	173
No. Observations	15653	6099	13901	10303	8748	15235	69939

Entries are regression coefficients, with standard errors, clustered on countries, in parentheses.

Measure-fixed effects are included in the models but omitted from the table.

Table 6: Predicting Respondent Disagreement

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Exec. Bribery	Exec. Theft	Pub. Bribery	Pub. Theft	Legisl. Corr.	Jud. Bribery	Pooled
Respondent Supports Free Market	0.012 (0.014)	0.035 (0.014)	0.022 (0.010)	0.027 (0.013)	0.007 (0.015)	0.018 (0.011)	0.019 (0.009)
Country Openness to Trade (Rescaled)	0.014 (0.006)	0.013 (0.011)	0.020 (0.008)	0.019 (0.008)	0.007 (0.009)	0.019 (0.005)	0.015 (0.005)
Respondent Supports Free Market x Country Openness to Trade (Rescaled)	-0.001 (0.002)	-0.002 (0.003)	-0.002 (0.002)	-0.003 (0.002)	0.002 (0.002)	-0.001 (0.001)	-0.001 (0.001)
Respondent Supports Electoral Democracy	-0.043 (0.029)	-0.027 (0.022)	-0.015 (0.017)	-0.027 (0.020)	-0.077 (0.032)	-0.027 (0.023)	-0.032 (0.014)
Country Electoral Democracy Level	-0.086 (0.222)	0.165 (0.231)	0.264 (0.184)	-0.069 (0.240)	-0.390 (0.250)	-0.241 (0.229)	-0.038 (0.155)
Respondent Supports Electoral Democracy x Country Electoral Democracy Level	0.053 (0.048)	-0.016 (0.037)	0.004 (0.037)	0.033 (0.053)	0.113 (0.054)	0.100 (0.047)	0.041 (0.028)
Respondent Supports Liberal Democracy	-0.008 (0.031)	0.048 (0.036)	0.023 (0.021)	0.021 (0.024)	0.004 (0.032)	0.016 (0.023)	0.015 (0.018)
Country Liberal Democracy Level	0.587 (0.199)	0.521 (0.298)	0.557 (0.149)	0.757 (0.161)	0.619 (0.194)	0.462 (0.193)	0.605 (0.144)
Respondent Supports Liberal Democracy x Country Liberal Democracy Level	0.010 (0.043)	-0.055 (0.063)	-0.020 (0.033)	-0.033 (0.031)	-0.031 (0.044)	-0.005 (0.034)	-0.023 (0.025)
R-squared	0.465	0.274	0.524	0.439	0.288	0.400	0.408
No. Countries	148	108	144	143	140	149	149
No. Observations	40548	22057	38177	34840	30567	38495	204684

Entries are regression coefficients, with standard errors, clustered on countries, in parentheses.

Year-fixed effects, respondent characteristics, and measure-fixed effects are included in the models but omitted from the table.

Table 7: Predicting Respondent Ratings with Respondent and Country Characteristics



## 7 Convergent Validity Assessment by Corruption Measure

In Table 8, we extend our analysis of respondent composition effects from Table 5 of the paper, presenting results for each corruption indicator. The results show that, although positively signed for all six indicators, the gender effect is actually only significant for one of the individual corruption measures: legislative corruption. Moreover, the effect for share of PhD respondents is not significant for executive or public sector bribery, nor for public sector theft. Overall, there are few systematic patterns of respondent composition affecting disagreement between the V-Dem corruption measures and the Worldwide Governance Indicators (WGI) Control of Corruption measure.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Exec. bribery	Exec. theft	Pub. bribery	Pub. theft	Legisl. corr.	Judic. bribery	Pooled
Share Female Respondents	0.021 (0.035)	0.038 (0.055)	0.023 (0.034)	0.019 (0.032)	0.064 (0.036)	0.042 (0.037)	0.052 (0.025)
Average Age of Respondents (Decades)	0.057 (0.076)	-0.088 (0.185)	0.022 (0.093)	-0.039 (0.115)	0.080 (0.135)	0.094 (0.109)	-0.017 (0.085)
Average Age of Respondents (Decades) x Average Age of Respondents (Decades)	-0.007 (0.008)	0.009 (0.019)	-0.004 (0.010)	0.003 (0.012)	-0.008 (0.015)	-0.007 (0.012)	0.002 (0.009)
Share Respondents with PhD	-0.029 (0.029)	-0.103 (0.050)	-0.013 (0.032)	-0.040 (0.031)	-0.127 (0.036)	-0.087 (0.034)	-0.084 (0.023)
Share Respondents Employed by Government	-0.037 (0.047)	0.004 (0.090)	-0.042 (0.058)	-0.072 (0.059)	-0.125 (0.072)	-0.059 (0.066)	-0.068 (0.042)
Share Respondents Born in Country	0.042 (0.033)	-0.020 (0.061)	-0.001 (0.030)	0.044 (0.040)	-0.033 (0.048)	-0.044 (0.044)	-0.009 (0.028)
Share Respondents Residing in Country	-0.014 (0.032)	0.008 (0.062)	0.044 (0.030)	-0.013 (0.041)	-0.000 (0.035)	-0.001 (0.035)	0.010 (0.027)
Average Support for Free Market among Respondents	0.018 (0.012)	-0.005 (0.023)	0.007 (0.014)	0.003 (0.015)	-0.007 (0.015)	0.015 (0.015)	0.006 (0.010)
Average Support for Electoral Democracy among Respondents	0.011 (0.017)	-0.011 (0.027)	0.004 (0.017)	-0.008 (0.019)	-0.006 (0.026)	-0.011 (0.023)	0.001 (0.015)
Average Support for Liberal Democracy among Respondents	-0.012 (0.015)	-0.033 (0.027)	-0.005 (0.016)	-0.018 (0.019)	0.011 (0.023)	0.006 (0.016)	-0.005 (0.013)
Mean Respondent Discrimination (beta)							0.004 (0.004)
Respondent Disagreement							0.345 (0.043)
Number of Respondents							-0.008 (0.002)
R-squared	0.099	0.097	0.143	0.101	0.143	0.165	0.099
No. Countries	163	114	159	154	151	160	164
No. Observations	10032	6619	9684	9333	8998	9569	54235

Entries are regression coefficients, with standard errors, clustered on countries, in parentheses.

The dependent variable is the absolute residuals from regressing each V-Dem measure on WGI.

Year-fixed effects, respondent characteristics, and measure-fixed effects are included in the models but omitted from the table.

Table 8: Explaining Deviations from WGI Control of Corruption Index with Aggregate Respondent Characteristics

## 8 Convergent Validity Testing with Case Studies

This part of the appendix provides the analysis for two additional case studies—Georgia and Spain— mentioned in the text.

For Georgia (Figure 2), V-Dem shows a steep, isolated drop and then a leveling off in corruption, whereas WGI and CPI mostly portray a gradual, less significant decline with increases during some periods.<sup>2</sup> The V-Dem measure mirrors the thick description from the published accounts, however, suggesting that it offers a more accurate depiction of corruption in the country (Chene 2011, Engvall 2012, Huber 2004, Kukhianidze 2009, Mitchell 2009, Shahnazarian 2012, Alam & Southworth 2012). According to publications, in the early independence period, which began in 1991, corruption was rampant as officials engaged in schemes, often in collaboration with organized crime, to enrich themselves and their clients during the socialism-to-market transformation. Public sector corruption flourished as economic upheaval encouraged civil servants to take bribes to supplement their meager salaries. The V-Dem measures show high levels of corruption during this period too, as Figure 2 illustrates. In part, the public’s frustration with this corruption sparked the Rose Revolution of 2003, which resulted in the ouster of the president and a dramatic drop in corruption beginning that year, the publications recount. During his first year the new president, Mikhail Saakashvili, implemented extraordinary anti-corruption measures, which included firing all traffic police and large numbers of other civil servants and which accounts indicate were successful. V-Dem shows a corresponding significant decline in corruption from 2003 to 2004. Sources describe how prosecutions against former government officials beginning in 2004 and organized crime legislation in 2003 reduced corruption. The V-Dem trend line drops again from 2004 and 2006. No significant anti-corruption efforts have been undertaken since 2005 and high-level corruption remains a problem, according to the publications. The V-Dem index reflects this with a leveling off of the line at a relatively high value in 2006.

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<sup>2</sup>Figure 2 and the following figure for Zambia use a normalized version of each index so that they are comparable to each other.

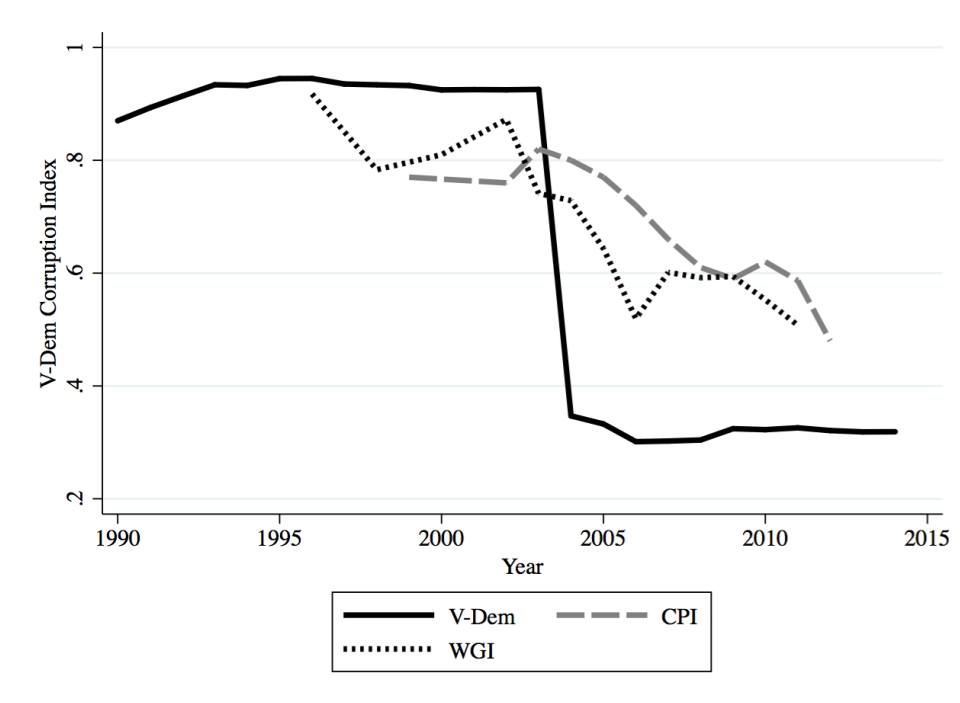


Figure 2: Corruption in Georgia

Turning to an historical case, we find that the V-Dem measures match the detailed accounts scholars have provided for Spain (Ben-Ami 1983, Cabrera & del Rey Reguillo 2007, Carr 1980, Heywood 1996, Jiménez 1998, Moreno-Luzón 2012, Preston 1994, Pujas & Rhodes 2002, Townson 2012). In the beginning of the 20th century during Primo de Rivera’s rule, corruption increased because his economic plan, involving the development of industrial monopolies and significant state economic intervention, introduced many opportunities for illicit personal gain by government officials, according to published accounts. With the end to this dictatorship, corruption levels fell to include only infrequent scams involving smaller numbers of officials, published reports indicate. The V-Dem data correspond with this account, showing that the corruption level jumped between 1922 and 1923, when Primo de Rivera took power, and fell from its high in 1930, when he left office. With the start of the Franco regime in 1939, corruption began to rise again, according to scholarly sources. The regime’s autarchic postwar reconstruction plan, which required officials to ration resources to industries and hire thousands of people, facilitated theft of government resources and bribe-

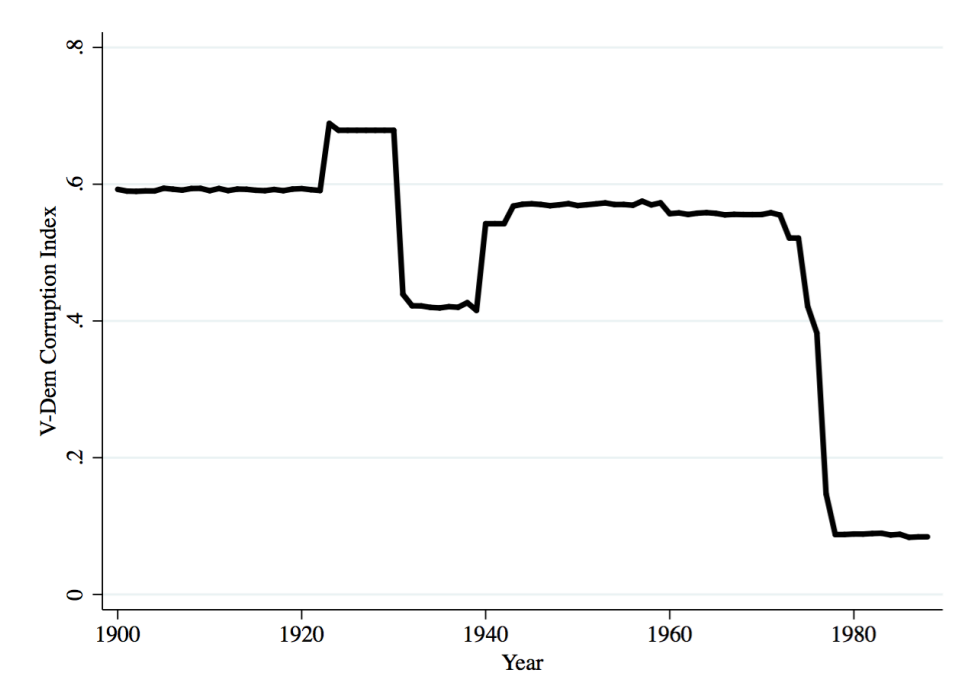


Figure 3: Corruption in Spain

taking by officials. Corruption continued through the end of Franco’s rule in 1975. The corruption resulting from the reconstruction plan subsided slightly beginning in the 1960s, but government officials continued to find new ways to enrich themselves. The V-Dem data are consistent with this thick description; they depict a sudden rise in corruption in 1939 and then a steady amount of corruption through the Franco period with the slight decrease from 1960. Franco’s death and the subsequent transition to democracy in Spain changed the nature of political corruption in the country. Corruption shifted from government officials enriching themselves to political parties engaging in illegal schemes to secure funds for campaigning. The V-Dem Corruption Index does not include measures of campaign fraud so it correctly shows a sudden decline through the period of Franco’s death and the democratic transition, reflecting the reduction in government officials’ use of public office for private gain. In sum, V-Dem data match detailed descriptions of historical corruption in Spain well.

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