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# Corruption and confidence in public institutions: Evidence from a global survey

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# Corruption and Confidence in Public Institutions: Evidence from a Global Survey

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Well-functioning institutions matter for economic development. In order to operate effectively, public institutions must also inspire confidence in those they serve. We use data from the Gallup World Poll, a unique and very large global household survey, to document a quantitatively large and statistically significant negative correlation between corruption and confidence in public institutions. This suggests an important indirect channel through which corruption can inhibit development: by eroding confidence in public institutions. This correlation is robust to the inclusion of a large set of controls for country and respondent-level characteristics. Moreover we show how it can plausibly be interpreted as reflecting at least in part a causal effect from corruption to confidence. Finally, we provide evidence that individuals with low confidence in institutions exhibit low levels of political participation, show increased tolerance for violent means to achieve political ends, and have a greater desire to "vote with their feet" through emigration. JEL classification: D73, O12, O17

Despite considerable debate over definitions, measurement, and methodology, it is widely-accepted among academics and policymakers that well-functioning public institutions play an important role in economic development. In turn, a key ingredient in the effectiveness of public institutions is the confidence that they inspire among those whom they serve. For example, households or firms who do not have confidence in the police or the courts are unlikely to avail themselves of their services, and may resort to other informal means of property protection or dispute resolution. Similarly, if individuals lack confidence in the honesty of the electoral process they are unlikely to vote, leading to low

turnout rates that cast doubt on elected officials' popular mandates and their ability to carry out their agendas. These effects of corruption on confidence have not been lost on policymakers. A recent quotation from Kai Eide, UN Special Representative of the Secretary-General for Afghanistan, neatly encapsulates this view: *"..[Corruption] pushes people away from the state and undermines our joint efforts to build peace, stability and progress for Afghanistan's peoples."*[2]

In this paper we empirically investigate the role of corruption in undermining confidence in public institutions. We document a quantitatively large and statistically significant partial correlation between measures of corruption and confidence in public institutions using a unique dataset. The Gallup World Poll (GWP) is a large cross-country household survey, interviewing more than 100,000 households in over 150 countries, annually or biennially in most countries since 2006. We use questions from the 2008/2009 wave of the GWP, covering over 78,000 respondents in a single cross-section of 103 countries to study the links between corruption and confidence in public institutions in both developed and developing countries. Not surprisingly, in countries where respondents report a high incidence of personal experiences with corruption, and in which corruption is perceived to be widespread, confidence in public institutions is also low. Much more interestingly, we show that this pattern also holds across individuals *within* countries: individuals who experience corruption and who report that corruption is widespread also tend to have lower confidence in public institutions. We show that this correlation is robust to the inclusion of a large set of variables to control for respondent-level characteristics, including a number of proxies intended to capture the respondent's tendency to complain or report more negatively on corruption and confidence than might otherwise be objectively warranted.

Our goal in this paper is not to develop new theoretical understandings of the links between corruption and confidence in public institutions. Rather, our much more modest objective is to significantly improve the quality of the existing empirical evidence on the relationship between the two. Relative to the existing empirical literature on this topic (which we discuss in more detail below), we offer three important contributions. First and most basic, our study covers a much larger set of countries and respondents than any previous work, which due to data limitations typically has been focused on small, usually regionally-focused samples of countries. Second, several features of the GWP allow us to include a very rich set of respondent-level control variables, importantly including proxies for respondents' unobserved propensity to respond negatively to both questions about corruption and confidence that might artificially bias our results towards finding a strong effect of corruption on confidence.

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2. UNAMA Press Release, United Nations Assistance Mission, August 20, 2008.

Third and perhaps most important, we offer a more serious treatment of a key identification problem that has largely been ignored by the existing literature. Simply documenting that survey respondents answer "yes" to a question like "is corruption a problem in your country" and "no" to a question like "are you confident in your national government", as most of the previous literature has done, does little to identify the direction of causation between the two. Perhaps respondents' perceptions of the prevalence of corruption drive their low confidence in institutions, but just as plausibly the opposite could be true: individuals who lack confidence in public institutions might as a result express the view that corruption is widespread.

We address concerns about endogeneity in two ways. The first is to exploit the difference in responses to two questions asked in the GWP. As we discuss in more detail below, the GWP asks both a generalized perceptions of corruption question, as well as a very specific experiential question which asks whether the respondent has been asked for a bribe in the past 12 months. The advantage of the latter question is that it is much more plausibly exogenous to respondents' confidence in public institutions since it in large part reflects the decision of a public official to solicit a bribe from the respondent, rather than the respondent's own characteristics. Consistent with this view, we find that the estimated effect of the experienced corruption question is substantially smaller and less statistically significant than the corresponding estimated effect using the generalized perceptions question. However it remains strongly significant and quantitatively large, supporting our claim of an important and plausibly causal effect running from corruption to confidence in public institutions. Second, as we argue in more detail below, even the partial correlation between corruption experiences and confidence might reflect some degree of reverse causation from confidence to corruption experiences. To assess this concern, we also perform a bounds analysis which shows that such reverse causation is unlikely to fully overturn our finding of a significant causal effect of corruption on confidence.

The rest of this paper proceeds as follows. In the next section we review the related literature. Section II describes the main features of the Gallup World Poll and compares our key corruption variables with other widely used ones. Section III contains our main empirical results linking corruption to confidence in public institutions. In Section IV we explore a number of robustness checks for this partial correlation, and in Section V we discuss in detail the identification problem and potential solutions. In Section VI we briefly document some consequences of the corruption-induced loss of confidence in public institutions, showing that individuals with low confidence in public institutions are less likely to engage in the political process, are more likely to condone violence as a means to further political ends, and are more likely to "vote with their feet" by emigrating. Section VII concludes.

## I. Related Literature

It is widely accepted by scholars and policymakers that well-functioning institutions are important for development. This view has been informed by a wide range of historical analysis, case studies, and cross-country empirical analysis. A few examples from this very large literature include North (1990), Knack and Keefer (1995, 1997), Kaufmann et al. (1999), Acemoglu et al. (2001), and Rodrik et al. (2004). The idea that a lack of confidence in public institutions undermines their effectiveness has also been widely studied. A few examples of this literature include Easton (1965, 1975), Gibson and Caldeira (1995), Putnam (2000), Uslaner (2002), Gibson et al. (2003), and Mishler and Rose (2005). There is also a large literature on the direct economic consequences of corruption for growth and investment, including Mauro (1995), Knack and Keefer (1995), Mo (2001), Pellegrini and Gerlagh (2004), and Méon and Sekkat (2005), and reviewed by Méon and Sekkat (2004) and Lambsdorff (2007).

Our contribution is to the small but growing literature on the effects of corruption that operate through confidence in public institutions. As our contribution in this paper is primarily empirical, we focus in this review only on the empirical aspects of previous papers that have studied the links between corruption and confidence in public institutions. We refer the interested reader to some of these other papers, most notably Anderson and Tverdova (2003), for an extensive discussion of the various theoretical channels through which corruption might impact confidence in public institutions.

A number of early papers in this literature exploit only the country-level variation in perceptions of corruption and confidence in public institutions. These include Pharr (2000) who looks at aggregate data over time for one country (Japan); Della Porta (2000) who provides a narrative discussion of country-level averages of both corruption and confidence for just three countries; and Anderson and Tverdova (2003) who combine country-level data on corruption perceptions from the Transparency International Corruption Perceptions Index with household survey data on confidence from 16 mostly developed countries. The major drawback of such studies is the possibility that excluded country characteristics (or year effects in the case of Pharr (2000)) may be confounding the observed relationship between corruption and confidence in public institutions.

A second set of papers improves on these by relying on household-level variation in survey responses to questions about corruption and confidence to estimate the correlation between the two. These include Rose, Mishler, and Haerpfer (1998), Mishler and Rose (2001), Catterberg and Moreno (2005), and Chang and Chu (2006), who all document a negative partial correlation between perceptions of corruption and confidence in public institutions in small and regionally-focused samples of countries. These papers however do not address the identification problem to which we have referred in the

introduction: it is unclear from the partial correlations documented by these authors whether respondents' perceptions of corruption drive their confidence in public institutions, or the converse.

Also in this category is a related paper by Hellman and Kaufmann (2004), who investigate how an alternative measure of corruption perceptions influences firms' confidence in, and use of, public institutions. They use data from the World Bank's Business Environment and Enterprise Performance Survey of 6500 firms in transition economies in 2002 to construct a measure of perceived 'crony bias' as the difference between firms' perceptions of their own influence and the influence of other firms they view as having strong political connections. They show that firms who perceive a great deal of crony bias in policy-making have less confidence in the judiciary, are less likely to use courts, are more likely to pay bribes, and are more likely to cheat on their taxes. Here as well, however, the direction of causation between corruption perceptions and confidence in institutions is unclear.

Four more recent papers improve on the ones discussed so far by relying on respondent-level data on personal experiences with corruption (and not simply perceptions of corruption) to study the effects on confidence in public institutions. Seligson (2002) uses survey data for four Latin American countries to test the effects of corruption experiences on perceptions of the legitimacy of the political system at the individual level. He finds that exposure to corruption erodes belief in the political system and reduces interpersonal trust. Bratton (2007) uses survey data from 18 African countries to document that perceptions of corruption are negatively correlated with respondents' satisfaction with public services, but somewhat surprisingly, personal experience with bribery is *positively* associated with user satisfaction. These papers share with ours the advantage of relying on corruption experiences questions which plausibly are more exogenous than corruption perceptions. However, these papers do not consider the further possibility we address later in the paper, that even responses to the corruption experiences question may be endogenous to responses to the confidence questions.[3]

Finally, Cho and Kirwin (2007) and Lavallée, Razafindrakoto and Roubaud (2008) also use a set of African countries covered by the Afrobarometer survey to investigate directly the links between confidence in public institutions and both corruption perceptions and corruption experiences questions using respondent-level variation. Unlike the rest of the literature surveyed so far, these papers are the only ones to explicitly acknowledge the potential for reverse causality and seek to address it. Cho and Kirwin (2007) in particular emphasize the possibility of vicious circles: corruption undermines confidence

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3. The identification problem is compounded by the fact that, despite having record-level data for many countries, Bratton (2007) does not appear to include country fixed effects in his specifications. This opens the possibility that unobserved country-level effects are confounding the relationship between corruption and satisfaction with public services that he studies.

in public institutions, and this in turn increases the acceptability of offering bribes to obtain public services, increasing the prevalence of corruption.[4] Both papers propose using instrumental variables drawn from the same survey in order to address this identification problem. However, as we explain in more detail below in our discussion of identification, this strategy depends on the validity of – in our view implausible – exclusion restrictions that the authors fail to adequately justify.

In summary, the existing literature on the effect of corruption on confidence in public institutions has been based on small samples of countries, and has for the most part failed to recognize or address the difficulty of isolating the direction of causation between corruption and confidence. In the remainder of this paper we show how we can use the very large sample size and the richness of the GWP core questionnaire to make progress on these issues.

## II. Corruption and Confidence in Institutions in the Gallup World Poll

The Gallup World Poll (GWP) has been fielded annually or biennially since 2006 in over 150 countries representing 95% of the world's adult population, and asks questions on a wide range of topics. This makes it the largest (in terms of country coverage) annual multi-country household survey in the world. The surveys are based on a standard methodology and considerable effort goes into ensuring comparability across countries. The surveys are designed to be nationally representative of people who are 15 years old or older and great efforts are made to interview households in rural areas, as well as politically unstable and insecure areas. The surveys are in-depth face-to-face interviews in all countries except the most developed countries such as Western Europe or Australia where a shorter version of the survey is fielded by phone.[5]

The majority of the core questions on the Gallup World Poll are not political in nature. Instead they concern individuals' well-being, asking about their everyday lives, level of happiness, life-satisfaction, expectations about their future, daily experiences of stress, etc.[6] This tends to build a higher level of trust between the interviewer and respondent than a more technical-sounding

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4. A related point is made by Sacks (2011) who argues theoretically and empirically that it is difficult for governments to embark on public sector reform programs absent some measure of public trust in the government. If in turn poor public sector management leads to corruption which undermines trust in government, there is the possibility of a "trap" where governments viewed as corrupt do not have the legitimacy required to carry out reforms that might actually reduce corruption.

5. For documentation of the GWP survey methodology refer to http://www.gallup.com/consulting/worldpoll/108079/Methodological-Design.aspx

6. In this context, we note that a number of recent scholarly papers have used the GWP data for empirical research. Examples include Deaton (2008, 2009), Helliwell (2008), Ng et al. (2008), Stevenson and Wolfers (2008), Deaton et al. (2009), Gandelman and Hernández-Murillo (2009), Helliwell et al. (2009), Krueger and Malečková (2009), and Pelham et al. (2009). The majority of these focus on GWP questions related to subjective assessments of personal well-being.

government-use questionnaire. Together with an explicit statement by the enumerator regarding the confidentiality of responses, this likely helps to improve respondent candor on some of the more sensitive questions in the survey.[7]

We combine countries from the 2008 and early 2009 waves of the GWP into a single cross-section of countries[8]. As our key measure of corruption we use the following specific question about the respondent's personal experience with corruption: *"Sometimes people have to give a bribe or present in order to solve their problems. In the last 12 months, were you, personally, faced with this kind of situation, or not (regardless of whether you gave a bribe/present)?"* This question, which we will refer to this as the "corruption experiences" question was a new addition to the core GWP questionnaire in the 2008 wave of surveys. However, for reasons of timing and questionnaire space, it was asked in only 115 of the 124 countries covered in our sample of the GWP in 2008 and early 2009. This question was asked in most high-income OECD, Latin American, Asian and African countries, but coverage of Eastern Europe is scarcer. Nevertheless the breadth of GWP data still allows us to study the effects of corruption experiences in a much larger sample of countries and respondents than any previous work.

The GWP also asks a more generic question about the corruption perceptions of respondents that we will use alongside the experience question in this paper: *"Is corruption widespread throughout the government in this country, or not?"* We refer to this as the "corruption perceptions" question. It was asked in 112 of the 124 countries in our sample. However, as the samples of countries in which the corruption experience and perception questions were fielded do not match perfectly, the sample in which both questions were asked comprises 103 countries. Appendix Table A contains a full description of all questions from the GWP used in the paper, and the final sample of 103 countries is listed in Appendix Table B.

There are substantial conceptual and practical differences between the corruption experiences and corruption perceptions question. The former asks about a respondent's personal experiences with corruption, while the latter solicits the respondent's views about the prevalence of corruption, regardless of whether the respondent has witnessed or experienced any corrupt acts himself. We note first that one would naturally expect to see differences between the responses to the two questions. The corruption experiences question is potentially a good gauge of "petty" or administrative corruption that individuals might be likely to experience in their everyday lives: a policeman asking for a

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7. However, one should not conclude that all respondents are fully candid in their responses to all questions. For approaches to identifying reticent respondent biases and applications, see Azfar and Murrell (2009) and Clausen, Kraay and Murrell (2010).

8. At the time of our access to the data, the relevant corruption questions had been asked only once in each country, and so we are unfortunately not able to exploit any within-country over-time variation in the data.

bribe instead of issuing a ticket, or a bureaucrat soliciting an irregular payment for a permit. On the other hand, the corruption perceptions question can potentially capture the prevalence of broader forms of corruption, particularly at higher levels of government. The downside of this latter question of course is that it does not draw on the respondent's personal experience, but rather is informed by the respondent's exposure to second-hand information about corrupt activities.[9] As we argue in more detail in Section 4, a crucial advantage of the corruption experiences question is that it is less likely to suffer from reverse causality, in the sense that individuals' confidence in institutions affects their corruption experiences. This will be very important for our interpretation of the empirical results that follow.

Figures 1 and 2 illustrate the country-level variation in these two measures of corruption from the GWP. Figure 1 plots country average corruption perceptions versus corruption experiences. All countries in the sample fall above the 45-degree line, indicating that on average, respondents are more likely to answer "yes" to the corruption perceptions question than to the corruption experiences question, in all countries. In some countries, this gap is large: for example, Japan and Italy have low rates of personal experience with corruption, but nevertheless strong perceptions of widespread corruption in government. One interpretation is that this suggests low rates of petty or administrative corruption but a greater incidence of high-level or political corruption. In Figure 2 we plot the two corruption questions from the GWP against a broad perceptions-based measure of corruption, the Worldwide Governance Indicators 'Control of Corruption' variable (Kaufmann et al., 2008). Both corruption questions display a fairly strong negative correlation with the Control of Corruption measure. However, this correlation is far from perfect, in part due to the fact that the Control of Corruption measure aggregates information from a large number of different data sources.

Our main objective in this paper is to empirically document the links between corruption and confidence in public institutions. We measure the latter using another question in the GWP, which asks respondents about their confidence in a variety of institutions at the national level. Specifically, the GWP asks "*Do you have confidence in each of the following?: (a) the military, (b) judicial system and courts, (c) national government, (d) health care or medical systems, (e) financial institutions or banks, (f) religious organizations,*

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9. In fact, this second-hand information or "hearsay" effect might very well artificially amplify the relationship between perceived corruption and confidence in public institutions. If a person who was solicited for a bribe tells all his/her friends about the experience, the experience of a single corrupt act may raise perceptions of the prevalence of corruption and lower confidence in institutions among all his/her friends. Consistent with this we do in fact find that (a) typically a substantially larger fraction of respondents state that corruption is widespread than those who respond to having personally experienced a bribe situation, and (b) the correlation between corruption perceptions and confidence is stronger than the correlation between corruption experiences and corruption. We are grateful to an anonymous referee for pointing this out to us.

FIGURE 1.  GWP Corruption Perceptions and Experiences
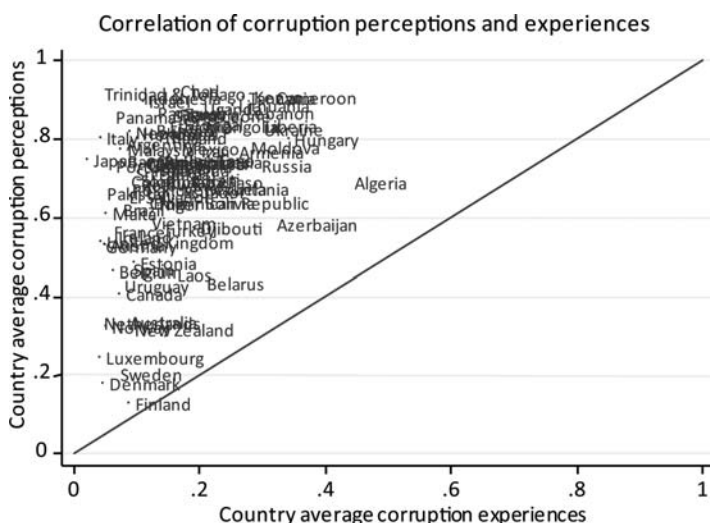


(g) quality and integrity of the media, and (h) honesty of elections. In this
paper we are primarily interested in confidence in *public* institutions, and so in
our core specifications we sum together the responses to (a), (b), (c) and (h) to
obtain an index of confidence in public institutions that ranges from 0 (respon-
dents who report no confidence in any of the four institutions) to 4 (respon-
dents who report confidence in all four institutions). We do not include (d), (e),
(f), and (g) as these questions do not refer to purely public institutions.
Consistent with this interpretation, we find that responses to the four questions
on public institutions are more strongly correlated with each other (with a
median pairwise correlation of 0.42) than they are with responses to the ques-
tions about other institutions that are not necessarily public (with a median
pairwise correlation of 0.28). We will discuss in more detail below the extent
to which this strong correlation of responses regarding the two types of
institutions is attributable to unobserved individual-specific effects that might
subsequently bias our estimates of the effects of corruption on confidence. [10]

10.  We note also that the confidence questions refer to national-level public institutions, whereas the
corruption experiences question might in part reflect respondents' interactions with local, rather than
national-level, public officials. To the extent that respondents entertain different views about different
levels of government this would work against us by weakening the correlation between the corruption
and confidence responses. As a robustness check however we have verified that our main specifications
also deliver similar results when we use two questions about confidence in local institutions also in the
GWP: (i) "In the city or area where you live, do you have confidence in the local police force?" and (ii)
"Do you approve of the leadership of the city or area where you live?". Responses to these questions on
local institutions are strongly correlated with responses to questions on national-level institutions, with
a median pairwise correlation of 0.44, which is similar to the median pairwise correlation among
national-level responses.

FIGURE 2. Correlation of GWP Corruption Experiences and Perceptions Questions with Worldwide Governance Indicators (WGI) 'Control of Corruption' Variable
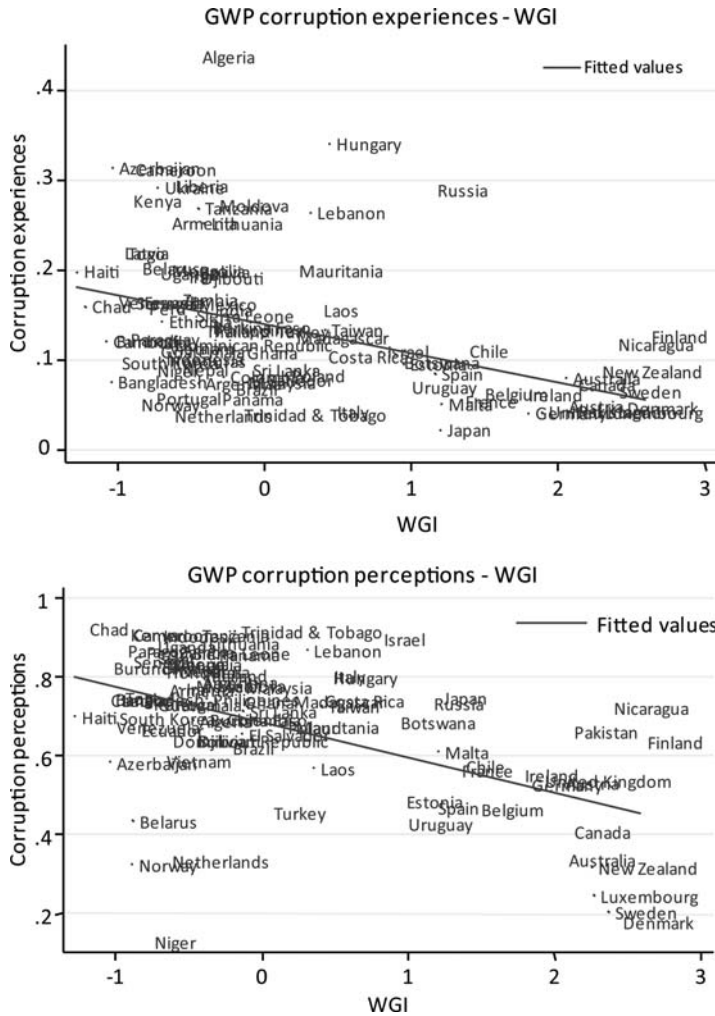
Figure 3 documents how this measure of confidence in institutions from the GWP compares with the most closely-related variables on confidence in institutions taken from the World Values Survey.[11] While the two measures are highly correlated in the common sample of countries for which both

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11. The WVS asks about respondents' confidence in a variety of institutions. We aimed to match this confidence index as closely as possible to our GWP index and therefore aggregated the answers to the following four questions into an index ranging from 0 to 4: "I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them [...]: a) the armed forces, b) the courts, c) the government (in your nation's capital), d) parliament."

FIGURE 3. Comparing Confidence in Institutions: Country Average Values of GWP and WVS Indices
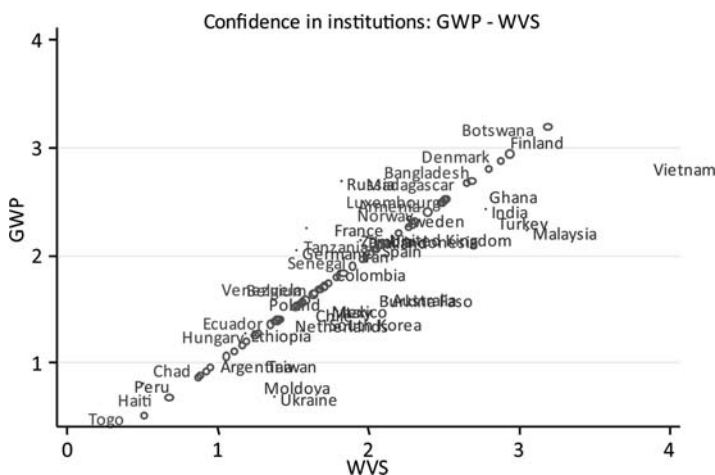
measures are available (a correlation of 0.81), it is worth noting the significantly smaller country coverage of the WVS. The circles in the graph represent countries that are present in our sample of the GWP but not in the most recent wave of the WVS. Using the GWP index therefore significantly increases the available cross-country sample to study effects of corruption on confidence in institutions.

We note however that this very large increase in country coverage offered by the GWP comes at the cost of a smaller number of respondents per country. Our sample size varies with availability of explanatory variables, but ranges from around 500 to 750 respondents per country, depending on the set of variables considered. In contrast, the WVS survey used to construct Figure 3 features on average 1419 respondents per country. And the Afrobarometer Surveys used in several papers in this literature feature on average more than 1000 respondents by country-year (see for example Table 4 in Lavallée, Razafindrakoto and Roubaud (2008)), although in a much smaller cross-section of just 18 countries in two waves.[12]

Finally, Figure 4 documents the relationship between the corruption questions and the confidence in institutions index at the country level. The top panel plots corruption perceptions against confidence in institutions and the

12. A further distinction of the GWP relative to the Afrobarometer Surveys is that it provides respondents only with binary response options to the corruption and confidence questions (Yes/No), whereas the Afrobarometer Surveys offer more graduated responses (for example, "never", "once or twice", "a few times", or "often" are possible responses to the corruption experiences question). There are advantages and disadvantages to both approaches. While the more graduated response in principle offers more detail, this detail can be difficult to interpret absent clear evidence on how respondents "anchor" the distinction between categories such as "a few times" and "once or twice".

FIGURE 4. Confidence in Institutions and Corruption Experiences/Perceptions
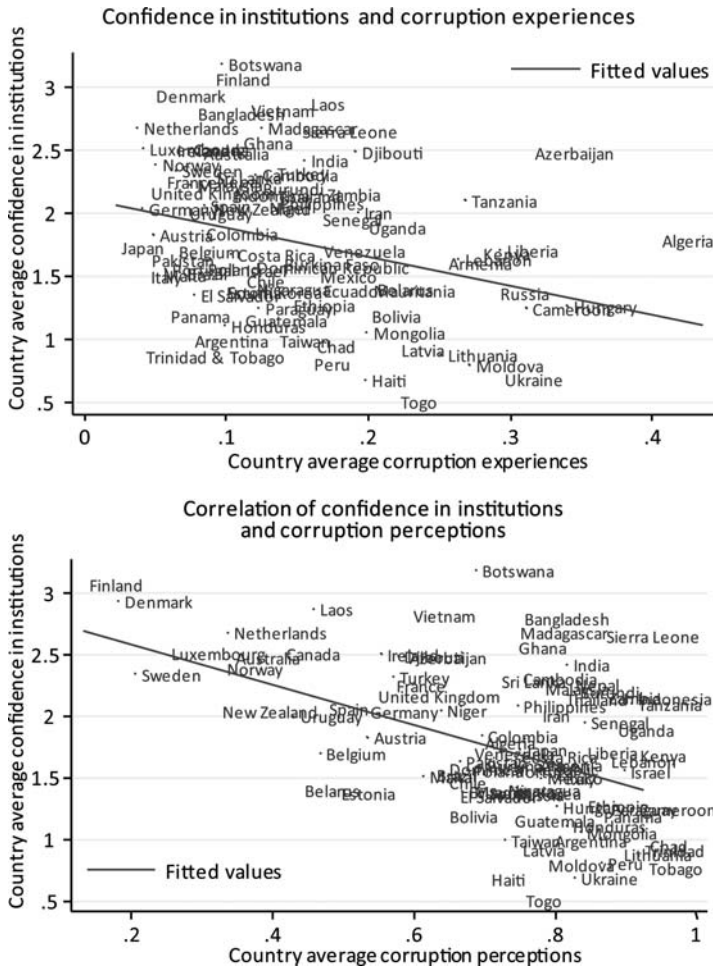
bottom panel plots corruption experiences against confidence. Both graphs display a negative relationship between corruption and confidence although this is much more pronounced for corruption perceptions. Here, all countries with very low average corruption perceptions score high on confidence in institutions. Scandinavian countries are the ones with the lowest perceived corruption and the highest confidence in institutions. Turning to corruption experiences, we see that in general countries with a higher share of people that have experienced corruption report lower confidence in institutions. However, there are a number of countries that have low levels of experienced corruption but still report low confidence. In this group we find particularly Latin American and Caribbean countries such as Panama, Argentina, Peru, and Trinidad and Tobago.

### III. Main Results: Respondent-Level Evidence on Corruption and Confidence in Institutions

While the cross-country relationship between corruption and confidence in institutions described above is suggestive of a link between the two, it is also far from convincing. A major concern here is that there may be many country-specific factors driving both variables. For example, some countries may simply have dysfunctional governments. On the one hand this will lead to high levels of corruption, and on the other hand public institutions naturally do not inspire confidence in such an environment. Any correlation between our two variables would simply reflect the omitted variable of government quality that is driving both corruption and confidence in public institutions. Another related possibility has to do with frame-of-reference issues in the survey responses themselves. It is plausible for example that citizens of rich countries have greater expectations of the quality and extent of public services provided by the government than do citizens in poor countries. In this case small departures from these high standards might result in lower reported confidence in rich countries. Similarly there might be greater tolerance of corruption in poor countries than in rich countries, resulting in lower reported corruption perceptions or experiences in poor countries. Thus cross-country differences in expectations of corruption and public service quality might also spuriously contribute to the cross-country correlation between measured corruption and confidence.[13]

To address this first concern, we primarily focus on the respondent-level variation within countries to study the relationship between corruption and confidence in institutions. Doing so allows us to control for any omitted country-level characteristics that might be driving the cross-country correlation. Table 1 documents the distinction between the within- and between-country results. Columns 1 and 3 reflect the between-country variation, showing coefficients of cross-country linear regressions of confidence in institutions on the two corruption measures, using country-averaged data. In contrast columns 2 and 4 capture the within-country variation, reporting estimates of the corresponding regressions including country fixed effects.[14] In all cases we find a negative correlation between corruption and confidence in institutions that is highly statistically significant. In the cross-country variation, the estimated coefficients imply that a one-standard-deviation increase (across countries) in either of the two corruption measures reduces confidence in institutions by

13. A better approach to dealing with this problem of frame-of-reference issues is at the survey design stage, for example through the introduction of anchoring vignettes to provide common context to respondents' qualitative responses. This option is unfortunately not available to us in the GWP which did not field such vignettes.

14. It would technically be more appropriate to estimate an ordered probit model because of the discrete and ordered nature of our dependent variable. Doing this does not change the sign or level of significance of the coefficients. However, because of the difficulties involved with interpreting ordered probit coefficients as marginal effects, we chose to present linear regression results throughout the paper.

TABLE 1. Bivariate Cross Country and Fixed Effects Regressions on the Relationship between Confidence in Institutions and Corruption

| | (1) Confidence in institutions cross-country | (2) Confidence in institutions fixed effects | (3) Confidence in institutions cross-country | (4) Confidence in institutions fixed effects |
|---|---|---|---|---|
| Corruption experiences | -2.318*** | -0.287*** | | |
| | (-3.10) | (-8.94) | | |
| Corruption perceptions | | | -1.620*** | -0.854*** |
| | | | (-5.17) | (-21.32) |
| _cons | 2.118*** | | 2.904*** | |
| | (17.73) | | (13.15) | |
| N | 103 | 78063 | 103 | 78063 |
| No. of countries | 103 | 103 | 103 | 103 |
| R-sq | 0.098 | 0.230 | 0.233 | 0.271 |

Estimation in columns (1) and (3) is by ordinary least squares on country-level averages of all variables, with heteroskedasticity-consistent standard errors. Estimation in columns (2) and (4) is by weighted least squares using sampling weights provided by Gallup, and heteroskedasiticity-consistent standard errors are clustered at the country level. T-statistics in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' analysis with data from Gallup World Poll

between 0.2 and 0.3 points on a 0-4 scale.[15] Within countries, the relationship between corruption and confidence is also very strong. Here a one standard deviation increases of either corruption variable within a country leads to a reduction of confidence in institutions of between 0.1 and 0.3 points.[16] Throughout the paper, we assess the significance of the within-country results using standard errors that are clustered at the country level, and observations are weighted using sampling weights provided by Gallup.

Anticipating our later discussion of endogeneity problems, we note that the estimated effect of the corruption perceptions question is nearly three times as large as the effect of the corruption experiences question. This is consistent with our view that the former is much more likely to be endogenous to respondents' confidence in public institutions, and that the latter much more plausibly identifies a causal effect running from corruption to confidence. While the estimated coefficients are statistically significant and quantitatively large, we note that the explanatory power of corruption for the confidence question is limited. In particular, in the fixed-effects regressions, the bulk of the R-squared is due to the country dummies. In contrast, the within R-squared net of the country fixed effects is 0.01 for the corruption experiences question, and 0.06 for the corruption perceptions question.

Although within-country regressions in Table 1 control for country-level omitted variables, a possible objection is that there may also be a variety of

15. Note that the cross-country standard deviations of corruption experiences and perceptions are 0.083 and 0.184, respectively.

16. Within-country standard deviation of corruption experiences is 0.360 and of corruption perceptions 0.368.

individual-specific characteristics that influence both (i) respondents' confidence in institutions; and (ii) the likelihood that they view corruption as prevalent, or that they report having been solicited for a bribe.[17] For example, richer, older, and more educated people might have more interactions with the state and so be more likely to find themselves exposed to corruption, and might also be more likely to have a cynical world view that precludes expressing confidence in public institutions.

To control for this we introduce a set of core control variables that we have found to be correlated with the corruption questions, and that also tend to be significant predictors of confidence in institutions. These include respondent age, gender, marital status, education, and the logarithm of self-reported income. We also introduce as basic control variables whether the household in which the respondent lives has access to the internet and a television. Access to such media may have ambiguous effects on individual's opinions about and experiences with corruption and institutions. On the one hand, officials might have a harder time extracting bribes from more informed citizens that have had the chance to obtain information about laws and regulations concerning their dealings with government. On the other hand, coverage of corruption cases in the media might influence corruption perceptions of individuals and may therefore have a direct effect on the answers to the perceptions question used in the GWP.

Table 2 presents the results adding these basic control variables. We note first that missing data presents a problem when introducing our set of core control variables. In particular, data availability for education and income is incomplete, and this decreases our sample to about 57,000 individuals in 94 countries. To aid in comparison with the previous results, we first repeat the results with no controls from Table 1 in the smaller sample for which the control variables are available, and then report results with controls. Reducing the size of the sample in this way makes little difference for the effect of corruption on confidence in public institutions: the results without control variables in columns (1) and (3) of Table 2 are essentially identical to those in columns (2) and (4) of Table 1. Second, we note that while the additional control variables featured in Table 2 do show some correlation with both the

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17. Of course, controlling for country-level fixed effects will not address concerns about variations in quality of subnational governments. It could for example be the case that within a country, some local governments are corrupt and deliver low-quality public services, and as a result respondents have low confidence in local government. It could then be that some of our observed within-country correlation reflects heterogeneity in government performance across local governments. It is difficult to control for this directly as the GWP does not contain much information attitudes towards local governments. As an imperfect proxy for this, we average responses to the question "*In the city or area where you live, are you satisfied or dissatisfied with: (a) The public transporation systems, (b) the roads and highways, and (c) the educational system or the schools*. This question does clearly ask respondents about public services in their locality, however it is not clear whether these are provided by local or by national-level governments. Despite this ambiguity, we include this as a control variables (results not reported but available from authors on request). Doing so has minimal effects on the size and significance of our estimated effects of corruption on confidence. We are grateful to an anonymous referee for pointing out this possible interpretation.

TABLE 2. Fixed Effects Regressions Including Control Variables

| | (1) Confidence in institutions | (2) Confidence in institutions | (3) Confidence in institutions | (4) Confidence in institutions |
|---|---|---|---|---|
| Corruption experiences | -0.298*** | -0.282*** | | |
| | (-7.73) | (-7.41) | | |
| Corruption perceptions | | | -0.870*** | -0.865*** |
| | | | (-20.71) | (-20.54) |
| Male | | 0.00637 | | -0.00831 |
| | | (0.30) | | (-0.41) |
| Age | | -0.0167*** | | -0.0149*** |
| | | (-6.51) | | (-5.80) |
| Age2 | | 0.000210*** | | 0.000190*** |
| | | (7.39) | | (6.69) |
| Married | | 0.0933*** | | 0.0775*** |
| | | (4.57) | | (3.76) |
| Secondary education | | -0.121*** | | -0.115*** |
| | | (-3.94) | | (-4.02) |
| Tertiary education | | -0.0853 | | -0.108** |
| | | (-1.65) | | (-2.45) |
| Income | | -0.000873 | | -0.0104 |
| | | (-0.07) | | (-0.82) |
| Internet access | | -0.0437 | | -0.0600** |
| | | (-1.38) | | (-2.08) |
| TV | | -0.0321 | | -0.0228 |
| | | (-0.66) | | (-0.48) |
| N | 57095 | 57095 | 57095 | 57095 |
| No. of countries | 94 | 94 | 94 | 94 |
| R-sq | 0.226 | 0.230 | 0.271 | 0.275 |

Estimation is by weighted least squares using sampling weights provided by Gallup, and heteroskedasiticity-consistent standard errors are clustered at the country level. T-statistics in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' analysis with data from Gallup World Poll

corruption and confidence variables, we find that the estimated coefficients on the corruption variables change very little, declining just slightly in absolute value. Finally, we note that the control variables all enter with expected signs and are generally significant. Older individuals seem to have a lower degree of confidence in institutions although this relationship is not linear. Also, married respondents express higher confidence than single ones. Higher income and education as well as access to internet and TV appear to reduce confidence although these latter effects are not statistically significant in all cases.

While the results in Table 2 are suggestive of a strong relationship between confidence in institutions on the one hand, and corruption perceptions and experiences on the other, one might nevertheless reasonably worry that this correlation is driven by other unobserved respondent-specific characteristics.[18]

18. Of course a preferred way of dealing with this type of heterogeneity is to identify our effects using individual-level over time variation in responses to the corruption and confidence questions. Unfortunately this option is not available to us in our single cross-section of countries and respondents.

A leading possibility is that, conditional on the basic control variables described above, some individuals may simply have a negative outlook or worldview which makes them more likely to think that corruption is widespread, and at the same time drives their lack of confidence in public institutions. Kaufmann and Wei (2000) coin this as a "kvetch" effect, after the Yiddish word for habitual complaining. To the extent that this drives the observed correlation between corruption and confidence in public institutions, we cannot interpret it as a causal link from the former to the latter.

At first glance, one might think that this potential problem of kvetch is less severe for the corruption experiences question than for the corruption perceptions question. However, while the former ostensibly is an objective question about the respondent's experience, there are nevertheless ways in which kvetch might creep into responses to this question as well. First, respondents prone to kvetch might simply falsely claim that they had been solicited for a bribe. They might also be more likely to interpret ambiguous interactions with a public official as a request for a bribe. Therefore, respondents who in general tend to complain a lot might also be more likely to report interactions with public officials as involving a request for a bribe. Second, the question about experiences with bribery follows a battery of other questions about corruption, one of which is the corruption perceptions questions described above. It is possible that respondents prone to kvetch might want to reinforce their point of stating that government corruption is a problem by subsequently answering that they personally have found themselves in a bribe situation, even if this is not the case.

Our strategy for dealing with this potential problem is to introduce control variables that we think may be good proxies for the propensity to kvetch. We consider three sets of such proxies.[19] The first set relies on questions in the survey that focus on individuals' self-reported well-being. For example, the GWP asks respondents whether they are satisfied with their living standards, and which rung on the ladder of life that they find themselves. The GWP also asks respondents whether they have felt a variety of emotions such as worry, stress, or happiness in the previous day. These variables are plausibly correlated with individual respondents' predisposition to complain. Second, the GWP asks respondents their opinions about a number of country-level variables including whether the economy is doing well or poorly, whether the economic outlook is favorable, and whether corruption is getting better or worse. Since our regressions include country fixed effects that soak up all national-level variation, variation in individuals' responses to these questions can be interpreted as capturing their idiosyncratic perceptions of the same national-level reality, and as such will also plausibly be correlated with kvetch.

As a final control for kvetch, we note that the battery of questions from which our "confidence in institutions" variables are drawn includes a further question about confidence in religious organizations. It seems plausible to us

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19. See Appendix Table A for a detailed description of the kvetch proxies and the specific GWP questions used in their construction.

that corruption perceptions or experiences are likely to have little direct impact on confidence in religious organizations. However there might be an indirect effect through kvetch: individuals more likely to complain in general might also report less confidence in religious organizations purely because of their propensity to kvetch. This suggests using a kind of differencing strategy to control for kvetch. In particular, one might ask whether corruption reduces the *difference* in confidence in public institutions and confidence in religious organizations. Alternatively and more flexibly, we can simply introduce confidence in religious organizations directly into our main specification as a control for kvetch.

Table 3 documents the results controlling for these proxies for kvetch. Since not all of the kvetch variables are available for all observations, our sample shrinks further to 49,019 respondents in 90 countries. As in Table 2, we first document that our main results with basic respondent-level controls do not change as we move to this smaller sample (compare columns (1) and (3) in Tables 2 and 3). More interesting is how our results on the effects of corruption perceptions and experiences on confidence in institutions change when we control for kvetch. We find that the estimated impact of corruption on confidence falls by about 34 percent (for the corruption experiences question) and by 40 percent (for the corruption perceptions question). This is a good indication that kvetch effects are present in the data and are at least partially addressed by the controls that we introduce. Interestingly, while both the corruption perceptions and corruption experiences questions might be subject to kvetch, we think it is plausible that kvetch effects are stronger for the former. The results in Table 3 are consistent with this: the coefficient on the corruption perceptions falls relatively more after the introduction of the kvetch controls. We note also that the kvetch controls are all highly-significant predictors of the confidence responses, and collectively contribute to a substantial increase in the explanatory power of the regressions (the R-squared increases from 0.22 to 0.38 in the case of corruption experiences, and from 0.27 to 0.39 in the case of corruption perceptions. However, even after introducing these very rigorous controls for kvetch, the negative relationship between corruption and confidence remains highly significant and the magnitude of both corruption coefficients remains large.[20]

20. A closely-related interpretation of these results is that individuals vary in their extent of "generalized trust", which could be thought of as the opposite of 'kvetch'. In the extreme, one could very well interpret responses to the corruption perceptions question and responses to questions about confidence in public institutions as both simply serving as proxies for individuals' "generalized trust". Our strategy for dealing with this problem would be the same as our strategy for dealing with 'kvetch' as the two are quite similar. The first is to introduce controls that might serve as proxies for 'kvetch' or "generalized trust" (although we note that Newton and Norris (2000) examined the question if trust and confidence is a feature of basic personality types but found little evidence to support this hypothesis.) In this respect our strategy of controlling for confidence in non-public institutions is particularly helpful because it directly controls for individuals' confidence and focuses only on the *differential degree* of confidence in public relative to non-public institutions. The second is to emphasize the corruption experiences question, which as we have argued is less likely to be tainted by either "kvetch" or "generalized trust".

TABLE 3: Fixed Effects Regressions Controlling for Kvetch

| | (1) Confidence in institutions | (2) Confidence in institutions | (3) Confidence in institutions | (4) Confidence in institutions |
|---|---|---|---|---|
| Corruption experiences | −0.280*** (−6.67) | −0.185*** (−5.62) | | |
| Corruption perceptions | | | −0.873*** (−20.05) | −0.518*** (−16.37) |
| Male | 0.0123 (0.52) | −0.00647 (−0.34) | −0.00512 (−0.23) | −0.0144 (−0.78) |
| Age | −0.0157*** (−5.90) | −0.00135 (−0.54) | −0.0141*** (−5.21) | −0.00118 (−0.47) |
| Age2 | 0.000198*** (6.76) | 0.0000456* (1.66) | 0.000180*** (6.02) | 0.0000425 (1.53) |
| Married | 0.0890*** (4.05) | 0.0399** (2.13) | 0.0739*** (3.37) | 0.0342* (1.80) |
| Secondary education | −0.131*** (−3.94) | −0.118*** (−4.79) | −0.124*** (−4.04) | −0.116*** (−4.81) |
| Tertiary education | −0.0822 (−1.49) | −0.0791* (−1.74) | −0.102** (−2.18) | −0.0916** (−2.21) |
| Income | −0.000267 (−0.02) | −0.0470*** (−3.68) | −0.00943 (−0.68) | −0.0488*** (−3.76) |
| Internet access | −0.0612* (−1.71) | −0.0784*** (−3.17) | −0.0817** (−2.55) | −0.0872*** (−3.68) |
| TV | −0.0327 (−0.67) | −0.101*** (−2.86) | −0.0234 (−0.49) | −0.0943** (−2.62) |
| Ladder of life | | 0.0151*** (2.74) | | 0.0139** (2.61) |
| Standard of living | | 0.228*** (8.30) | | 0.220*** (8.02) |
| Emotions | | 0.0533*** (4.90) | | 0.0519*** (4.77) |
| Economy good/bad | | 0.530*** (17.52) | | 0.489*** (17.20) |
| Economic outlook | | −0.190*** (−11.61) | | −0.183*** (−11.70) |
| Corruption trend | | −0.272*** (−15.54) | | −0.207*** (−12.61) |
| Religious organizations | | 0.705*** (19.25) | | 0.689*** (18.81) |
| N | 49019 | 49019 | 49019 | 49019 |
| No. of countries | 90 | 90 | 90 | 90 |
| R-sq | 0.218 | 0.378 | 0.264 | 0.392 |

Estimation is by weighted least squares using sampling weights provided by Gallup, and heteroskedasiticity-consistent standard errors are clustered at the country level. T-statistics in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' analysis with data from Gallup World Poll

## IV. Robustness of the Main Results

Thus far we have seen that there is a large and statistically significant partial correlation between measures of corruption and confidence in public institutions, and that this result is robust to the addition of (a) country fixed effects, (b) a set of respondent-level controls, and (c) a set of proxies for 'kvetch'. In this section we subject these main results to a variety of further robustness checks. We first disaggregate the confidence in institutions measure into its four components and investigate how the effects of corruption vary across these components. We then also estimate our main specification country-by-country, and document how the estimated coefficients on the corruption questions vary by country, by level of corruption, and by level of development.

In Table 4 we disaggregate the confidence in institutions measure into its four components: confidence in the military, judiciary, national government, and in the honesty of elections. In the first four columns we report results for our core specification, using each of these components of the overall confidence measure separately as the dependent variable.[21] We do this for both the corruption experiences (top panel) and corruption perceptions measure (bottom panel). In all cases, we include, but do not report estimated coefficients for, the full set of control variables used in Table 3. For the corruption experiences question, we find only modest differences across components in terms of the magnitude of the estimated partial correlation between corruption and confidence. This effect is largest for confidence in the judiciary at 0.06, and smallest for confidence in the honesty of elections, at 0.04. There is somewhat more variation across the various confidence measures for the corruption perceptions question. The estimated effect of corruption is much lower for confidence in the military, at 0.06, than it is for the other three measures, which range from 0.13 to 0.17.

Thus far we have assumed that the slope of the relationship between corruption and confidence in public institutions is the same in all countries, at all income levels, and at all levels of corruption. We now relax this assumption and re-estimate our main specification from Table 3, country-by-country, so that we can investigate how this slope varies across countries. We note first that the means of the country-by-country estimates in Table 5 are slightly smaller than the pooled estimates in Table 3 (at -0.13 and -0.47 for the corruption experiences and perceptions questions, respectively). The sign of the estimated coefficient is also fairly consistently negative across countries, with 67 percent (91 percent) of country estimates being negative for the corruption experiences (perceptions) question. However, and not surprisingly, in many

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21. Since the dependent variable for the individual confidence in institutions regressions is a binary variable, a probit specification would be more appropriate than the linear probability model. However, to improve comparability with previous results we report estimates from linear probability models here. We have also estimated the specifications in Table 4 using a probit model and find a similar pattern of relative magnitudes of the effect of corruption on the different confidence in institutions variables.

TABLE 4. Disaggregation of "Confidence in Institutions" Index

|  | (1)<br>Military<br>linear | (2)<br>Judiciary<br>linear | (3)<br>National Gov.<br>linear | (4)<br>Elections<br>linear |
|---|---|---|---|---|
| Dependent variable is<br>    Corruption experiences | -0.0431*** | -0.0576*** | -0.0480*** | -0.0367*** |
|  | (-4.74) | (-5.02) | (-4.70) | (-3.48) |
| R-sq | 0.232 | 0.234 | 0.278 | 0.271 |
| Dependent variable is<br>    Corruption perceptions | -0.0623*** | -0.133*** | -0.166*** | -0.157*** |
|  | (-6.82) | (-12.18) | (-13.54) | (-13.99) |
| R-sq | 0.234 | 0.241 | 0.291 | 0.282 |
| N | 49019 | 49019 | 49019 | 49019 |
| No. of countries | 90 | 90 | 90 | 90 |

Estimation is by weighted least squares using sampling weights provided by Gallup, and heteroskedasiticity-consistent standard errors are clustered at the country level. T-statistics in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

countries the estimated effects are not statistically significant, given the much smaller sample of observations on which to base inference in each country. In fact, the mean number of observations per country for the regressions in Table 5 is just 594, as opposed to 49,019 in the pooled regressions of Table 3.

We next examine how these estimated coefficients vary across regions (using the standard World Bank regional classification). While it is evident that corruption experiences as well as perceptions affect confidence negatively in all regions on average, the magnitude and strength of the relationship varies widely across regions, from -0.06 to -0.32 in the case of corruption experiences, and from -0.10 to -1.00 in the case of corruption perceptions. In the case of corruption experiences, the largest mean estimated effect is for the South Asia region. The relationship between corruption and confidence in institutions is also the strongest in this region with 60 percent of countries reporting a statistically significant negative relationship. At the same time however, while South Asia showed the largest coefficient of corruption experiences, its perceptions coefficient is the smallest among the regions in our sample.

In the remaining panels of Table 5 we document how the estimated correlation between corruption and confidence varies with the average level of corruption, and the level of development, of the country. To do this, we divide countries into three equal groups according to their country-level average score on the corruption question, and also their level of GDP per capita. We then report the mean (across countries) of the estimated slope coefficient on corruption from the country-by-country regressions, for each group. In the case of corruption experiences, there is a pronounced non-linear relationship in countries' overall level of corruption. In countries where reported corruption experiences are on average either very low or very high, the estimated effect of corruption experiences on confidence in institutions is small (at 0.07 and 0.09

TABLE 5. Disaggregation into Subgroups Depending on Geographic Region, Level of Corruption, and Income

| | | CORRUPTION EXPERIENCES | | | | CORRUPTION PERCEPTIONS | | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. of countries in group | Mean estimated slope coefficient | Standard deviation of slope coefficient | Proportion of negative coefficients | Proportion of negative and signficant coefficients* | Mean estimated slope coefficient | Standard deviation of slope coefficient | Proportion of negative coefficients | Proportion of negative and signficant coefficients* |
| Full sample | 90 | -0.134 | 0.255 | 0.678 | 0.222 | -0.466 | 0.376 | 0.911 | 0.633 |
| Europe & Central Asia | 11 | -0.172 | 0.200 | 0.727 | 0.272 | -0.312 | 0.419 | 0.818 | 0.454 |
| Middle-East & North Africa | 4 | -0.153 | 0.282 | 0.750 | 0.250 | -0.730 | 0.250 | 1.000 | 1.000 |
| East Asia & Pacific | 9 | -0.060 | 0.175 | 0.667 | 0.222 | -0.224 | 0.297 | 0.778 | 0.333 |
| South Asia | 5 | -0.319 | 0.265 | 0.800 | 0.600 | -0.104 | 0.259 | 0.600 | 0.400 |
| Latin America & Caribbean | 19 | -0.194 | 0.271 | 0.684 | 0.369 | -0.490 | 0.191 | 1.000 | 0.737 |
| Sub-Saharan Africa | 18 | -0.061 | 0.278 | 0.611 | 0.222 | -0.472 | 0.521 | 0.889 | 0.556 |
| High income: OECD | 20 | -0.113 | 0.281 | 0.650 | 0.000 | -0.561 | 0.211 | 1.000 | 0.800 |
| High income: non-OECD | 4 | -0.094 | 0.143 | 0.750 | 0.000 | -1.006 | 0.385 | 1.000 | 0.750 |
| Low level of corruption experiences/ perceptions | 30 | -0.066 | 0.241 | 0.600 | 0.000 | -0.485 | 0.407 | 0.933 | 0.633 |

*(Continued)*

TABLE 5. Continued

| | No. of countries in group | CORRUPTION EXPERIENCES | | | | CORRUPTION PERCEPTIONS | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean estimated slope coefficient | Standard deviation of slope coefficient | Proportion of negative coefficients | Proportion of negative and signficant coefficients* | Mean estimated slope coefficient | Standard deviation of slope coefficient | Proportion of negative coefficients | Proportion of negative and signficant coefficients* |
| **Medium level of corruption experiences/ perceptions** | 30 | -0.243 | 0.238 | 0.833 | 0.367 | -0.447 | 0.345 | 0.867 | 0.667 |
| **High level of corruption experiences/ perceptions** | 30 | -0.093 | 0.256 | 0.600 | 0.300 | -0.465 | 0.384 | 0.933 | 0.600 |
| **Low income** | 30 | -0.129 | 0.272 | 0.600 | 0.300 | -0.370 | 0.437 | 0.867 | 0.400 |
| **Medium income** | 30 | -0.153 | 0.244 | 0.733 | 0.300 | -0.449 | 0.406 | 0.867 | 0.733 |
| **High income** | 30 | -0.121 | 0.256 | 0.700 | 0.067 | -0.579 | 0.234 | 1.000 | 0.767 |

* statistically significant coefficients at at least the 5 percent level were included

Each row provides summary statistics on indicated slope coefficients estimated country-by-country within the indicated country groups. Country-level estimation is by weighted least squares using sampling weights provided by Gallup.

respectively). In contrast, for intermediate-corruption countries, the adverse effect of corruption on confidence is much larger.

This suggests that in countries where corruption is rare, a respondent's isolated experience with having been solicited for a bribe will not be enough to substantially undermine his or her faith in overall public institutions. And similarly, in countries where corruption is widespread, personal experiences with or perceptions of corruption might also not change confidence in public institutions because this confidence is very low to begin with. In contrast, for countries with a moderate prevalence of corruption, personal experiences with corruption have a stronger adverse impact on confidence in public institutions. Interestingly, however, this pattern is not present in the corruption perceptions question, nor is it present when countries are divided into groups according to income levels.

## V. Concerns About Endogeneity

We now discuss the extent to which the partial correlation between corruption and confidence in public institutions can be interpreted as a causal effect from the former to the latter. As noted in the introduction, there is an important identification problem: corruption might lead to a loss of confidence in public institutions as we emphasize here, but at the same time, respondents who report low confidence in public institutions might as a result hold the belief that corruption is widespread as well. This point is also noticed by Cho and Kirwin (2007) who argue that individuals who do not trust public institutions might be more likely to resort to bribery to advance their interests, or to believe that corruption is widespread. This can lead to vicious circles where corruption and a lack of confidence in public institutions feed off each other. This potential for bi-directional causation complicates the interpretation of the partial correlation between corruption and confidence in institutions that we have documented. This is the classic identification problem: the observed correlation between corruption and confidence might reflect causal effects from corruption to confidence that we emphasize. But it could also reflect causation in the opposite direction.

We note first that a particular strength of the corruption experiences question is that it is much less likely to be prone to reverse causation than the corruption perceptions question. To see why, recall that the experience question asks respondents whether they have been solicited for a bribe during the past 12 months. To the extent that the decision to solicit a bribe originates with the public official with whom the respondent is interacting, there should be no problems of reverse causation: it seems unlikely that a public official would even know the respondent's confidence in public institutions, let alone base his decision to solicit a bribe on it.[22] This stands in contrast with the corruption

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22. Indeed, the pattern of reverse causation might go against our results, if individuals with low confidence in public institutions choose not to interact with government agencies and so are less likely to report having been asked for a bribe.

perceptions question, where there is a more plausible channel of causation in the opposite direction: individuals who have low confidence in public institutions may precisely for this reason also believe that corruption is widespread in government. This potential endogeneity bias may in part account for the fact that in most of our specifications thus far, the estimated slope of the relationship between corruption perceptions and confidence is larger in absolute value, and typically is also much more significant, than in the regressions using the corruption experiences question. Thus we argue that our results using the corruption experiences question provide a more plausible estimate of the causal effect of corruption on confidence in public institutions than do our results with the corruption perceptions question.

At the same time, we acknowledge that there may still be such endogeneity bias, although to a lesser extent, even in the corruption experiences question. This would occur if respondents expressing a low confidence in public institutions are more likely to interpret an ambiguous interaction with a public official as a request for a bribe than other respondents with higher confidence in public institutions. Such potential endogeneity bias is extremely difficult to correct using purely cross-sectional observational data such as what we have in the GWP. This is because the usual strategy with observational data of identifying instruments (variables that plausibly affect only corruption, but not confidence in institutions, and vice versa) is very difficult to implement since it is hard to make a compelling case for the requisite exclusion restrictions.

In particular, we find it hard to make a convincing case that there are variables in the GWP that predict corruption at the individual level, but do not have direct predictive power for confidence in institutions, that we could then use as instruments for corruption. To illustrate why we think this approach is not promising, consider the identifying assumptions implicit in the few papers in the literature that have attempted this instrumental variables strategy. Cho and Kirwin (2007) make the identifying assumption that variables such as respondents' overall trust in others, and their perceptions of the political influence of ethnic groups, matter only for corruption and have no direct effect on confidence in institutions (see the exclusion restrictions implicit in their Table 1). Lavallée, Razafindrakoto, and Roubaud (2008) claim with little justification that a dummy variable indicating that the respondent is head of the household, and a variable capturing the respondent's views on the acceptability of paying a bribe, matter only for corruption and have no direct effect on confidence.

We do not find such exclusion restrictions to be convincing. One might easily imagine that any of these variables are directly correlated with confidence in public institutions: for example respondents' might believe that paying a bribe is acceptable precisely because they have no confidence in public institutions. It is also striking that in both papers, the instrumented estimates of the effects of corruption on confidence are vastly *larger* in absolute value than the uninstrumented estimates, while the feedback problem these authors seek to

correct would suggest that the true effects of corruption on confidence should be much *smaller* in absolute value than the corresponding OLS estimates (see columns (1) and (2) of Table 1 in Cho and Kirwin (2007) and Table 4 in Lavallée, Razafindrakoto and Roubaud (2008)). These counterintuitive results likely are due to a failure of the exclusion restrictions required to justify the instrumental variables estimator.[23][24] In contrast, we have consistently found that the magnitude of the effect of the more exogenous corruption experiences question on confidence is always substantially smaller than the effect of the corruption perceptions question, consistent with the view that the former is less tainted by reverse causation.

Absent compelling instruments, we use an argument based on Leamer (1981) to provide a rough bound on the extent to which our estimates might reflect reverse causation. To make this concrete let y denote the portion of confidence that is orthogonal to all of the control variables, including the country fixed effects, in columns 2 and 4 of Table 3, and let x denote the same orthogonal component of corruption. The possibility of causal effects in both directions between corruption and confidence can be captured by the assumption that y and x are generated by the following system of two equations:

$$
\begin{aligned}
y &= \beta x + \varepsilon \\
x &= \gamma y + \upsilon
\end{aligned}
\tag{1}
$$

We are primarily interested in the slope coefficient β which captures the effect of corruption on confidence. However, we cannot identify this effect absent some instrument that shifts corruption without at the same time affecting confidence, i.e. we need to find a variable that is included in the second equation but excluded from the first.

Absent such an instrument, the problem is simply that there are four unknown parameters in this system ($\beta$, $\gamma$, and the two variances of the error terms), while there are just three moments in the data (V(x), V(y), and COV(x,y)).[25] However, we can still make progress by exploring how our

23. Lavallée, Razafindrakoto and Robaud (2008) claim support for their identification strategy in the fact that tests of overidentifying restrictions fail to reject the null of instrument validity. Here they fall into the (unfortunately common) pitfall of failing to recognize that such tests are valid *only if at least one instrument is indeed valid*. We think it is very difficult to make such a case even for just one instrument in this context.

24. An alternative approach sometimes used with survey data is to use the average of the corruption question across all observations within a pre-specified group, for example all respondents in the same city, as an instrument for corruption. This is plausible as an identification strategy only to the extent that we think that the unexplained portion of confidence is uncorrelated across respondents within a group. This assumption is difficult to justify in practice.

25. In fact things might be even more complicated, as we have assumed for simplicity that the covariance between the two structural errors is zero as well. We justify this simplifying assumption by observing that in Table 3 we have already controlled for a large set of variables that might simultaneously be driving corruption and confidence. Thus it is more plausible that the errors in the orthogonalized system here are independent.

estimate of $\beta$ would change given differing assumptions on the strength of the reverse causation captured by $\gamma$. To do this, express the three observable data moments in terms of the four unknown parameters, and then solve for $\beta$ conditional on a value of $\gamma$. Then by varying $\gamma$ we can explore the robustness of our conclusions about $\beta$ to alternative assumptions regarding the strength of the reverse causation. Some simple algebra delivers this very natural estimator for $\beta$ as a function of $\gamma$:

$$\hat{\beta} = \frac{COV(x,y) - \gamma V(y)}{V(x) - \gamma COV(x,y)} \tag{2}$$

Note that when $\gamma = 0$ we retrieve the OLS estimator, i.e. $\hat{\beta} = COV(x,y)/V(x)$, since in this case there is no feedback from confidence to corruption, and so OLS is valid. On the other hand, note that $\hat{\beta} = 0$ when $\gamma = COV(x,y)/V(y)$ which is simply the OLS estimate of the feedback effect in the second equation. This is because if there is in fact no causal effect running from corruption to confidence, then the second equation can be estimated by OLS.[26] Moreover, the range from $\gamma = 0$ to $\gamma = COV(x,y)/V(y)$ seems to us to be a reasonable prior bound for the magnitude of reverse causation. It seems reasonable to assume that $\gamma < 0$, i.e. less confidence implies more corruption. However, the magnitude of this effect is likely to be less (in absolute value) than $\gamma = COV(x,y)/V(y)$. If it were not, then the data would imply that $\beta > 0$, i.e. that corruption *raises* confidence in public institutions, which seems implausible.

We plot this estimate of $\beta$ (on the vertical axis) as a function of $\gamma$ (on the horizontal axis) in Figure 5, using this prior plausible range of values for the magnitude of reverse causation. The top panel refers to the corruption experiences question, and the bottom to the corruption perceptions question. In both panels, when $\gamma = 0$ we retrieve the OLS estimates of $\beta$ on the horizontal axis corresponding to those in Columns (2) and (4) of Table 3. As we allow for the possibility of more and more reverse causation, i.e. as $\gamma$ becomes more and more negative capturing a stronger effect of confidence on corruption, our estimate of the main effect of interest, $\beta$, becomes closer and closer to zero. We also report 95 percent confidence intervals for $\beta$, and these suggest that our estimate of $\beta$ would be insignificantly different from zero only if $\gamma$ were very

26. While rarely used, it is interesting to note that the basic argument here is nearly 80 years old! Leamer (1981) credits Leontief (1929) with first performing this basic calculation. A very recent and growing literature on instrumental variables estimation with imperfect instruments can be thought of as resurrecting some of these basic insights as well (see for example Kraay (forthcoming), Conley, Hansen and Rossi (forthcoming), and Nevo and Rosen (forthcoming). In the case of OLS which we consider here where the corruption variable serves as its own instrument, the unobserved feedback parameter $\gamma$ governs the strength of the correlation between the instrument and the error term. The approaches in these three more recent papers can be thought of as a more formal way of exploring how the IV estimator varies with alternative assumptions about the strength of the correlations of the instrument with the error term.

FIGURE 5.  Robustness of Main Results to Reverse Causation



Corruption Experiences

Corruption Perceptions
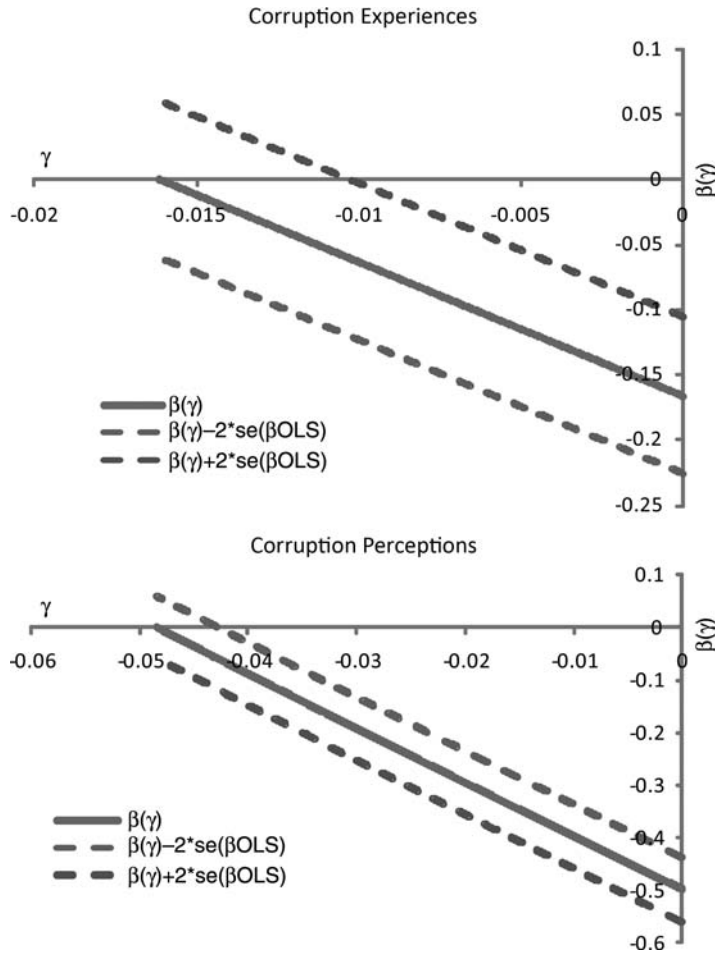
large (in absolute value). In particular, we note that the 95 percent confidence interval for $\beta$ includes zero only when $\gamma < -0.01$ in the case of the corruption experiences question, and when $\gamma < -0.04$ for the corruption perceptions question. This represents less than one-quarter of the plausible range for $\gamma$ indicated on the horizontal axis in each figure.

We conclude from this that it is *a priori* very plausible that there may be causal effects running in both directions between corruption and confidence in public institutions. In this paper we are concerned primarily with the channel from corruption to confidence. While we are unable to formally isolate this channel using credible instruments given data limitations, we nevertheless argue that there are at least two reasons why the results we show are at least partially interpretable as a causal effect from corruption to confidence. The

first is that, as we have discussed, it is much more difficult to see the channel for potential reverse causation in the results using the corruption experiences question. The second is that, even if reverse causation were present, it would need to be extremely strong in order to undermine our conclusion of a statistically significant effect of corruption on confidence.

## VI. Why Does the Adverse Effect of Corruption on Confidence in Institutions Matter?

Thus far we have documented a strong negative relationship between corruption and confidence in public institutions. We conclude by using a small number of variables available in the GWP to investigate some direct consequences of this loss of confidence. We do so in an effort to shed some light on what might be some of the mechanisms through which corruption-induced lack of confidence in public institutions could undermine the functioning of those institutions. In particular, we find some evidence that reduced confidence in public institutions leads to a reduction in political participation, raises support for violent means of political expression, and increases the desire of respondents to vote with their feet through emigration. We interpret each of these as a signal of respondents' likelihood to "opt out" of participation in public institutions in a country. This in turn is suggestive of how lack of confidence in public institutions undermines their effectiveness, but it is of course far from the final word.

We draw on a number of questions from the GWP to measure these consequences of corruption-induced losses in confidence. To measure political participation, we use the GWP question which asks *"In the past month, have you voiced your opinion to a public official?"* As a measure of support for violent forms of protest, we use a question from the GWP which asks: *"Do you think groups that are oppressed and are suffering from injustice can improve their situation by peaceful means alone?"* And finally, the desire to emigrate is captured by response to the question *"Ideally, if you had the opportunity, would you like to move permanently to another country, or would you prefer to continue living in this country?"*

In Table 6 we document the relationship between corruption, confidence, and these three outcomes. In the first column, we report the simple bivariate relationship between the confidence variable and the three outcome variables of interest, and in the second column we introduce the full set of control variables from Table 3. We find strong evidence that a lack of confidence in public institutions raises sympathy for violent protest, raises the desire to migrate, and reduces political participation. We next investigate the extent to which this reflects the effect of corruption perceptions and corruption experiences. In columns three and four we estimate regressions of the three outcome variables on the two corruption variables alone (but still controlling for the full set of control variables from Table 3). Here we find evidence that those individuals

TABLE 6. Why Do Adverse Effects of Corruption Matter?

| | (1) Achieve change by peaceful means | (2) Achieve change by peaceful means | (3) Achieve change by peaceful means | (4) Achieve change by peaceful means | (5) Achieve change by peaceful means | (6) Achieve change by peaceful means |
|---|---|---|---|---|---|---|
| Confidence in institutions | 0.0958*** | 0.0776*** | | | 0.0764*** | 0.0767*** |
| | (8.70) | (6.48) | | | (6.41) | (6.61) |
| Corruption experiences | | | −0.0833*** | | −0.0690** | |
| | | | (−2.84) | | (−2.45) | |
| Corruption perceptions | | | | −0.0572* | | −0.0174 |
| | | | | (−1.76) | | (−0.58) |
| N | 46249 | 46249 | 46249 | 46249 | 46249 | 46249 |
| No. of countries | 89 | 89 | 89 | 89 | 89 | 89 |
| Controls | no | yes | yes | yes | yes | yes |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Like to move to other country? | Like to move to other country? | Like to move to other country? | Like to move to other country? | Like to move to other country? | Like to move to other country? |
| Confidence in institutions | −0.127*** | −0.0676*** | | | −0.0629*** | −0.0622*** |
| | (−8.45) | (−4.63) | | | (−4.27) | (−4.26) |
| Corruption experiences | | | 0.249*** | | 0.236*** | |
| | | | (7.15) | | (6.63) | |
| Corruption perceptions | | | | 0.130*** | | 0.0964*** |
| | | | | (4.35) | | (3.22) |
| N | 34184 | 34184 | 34184 | 34184 | 34184 | 34184 |

*(Continued)*

TABLE 6. Continued

| | (1) Achieve change by peaceful means | (2) Achieve change by peaceful means | (3) Achieve change by peaceful means | (4) Achieve change by peaceful means | (5) Achieve change by peaceful means | (6) Achieve change by peaceful means |
|---|---|---|---|---|---|---|
| No. of countries | 69 | 69 | 69 | 69 | 69 | 69 |
| Controls | no | yes | yes | yes | yes | yes |
| | (1) Voiced opinion to official | (2) Voiced opinion to official | (3) Voiced opinion to official | (4) Voiced opinion to official | (5) Voiced opinion to official | (6) Voiced opinion to official |
| Confidence in institutions | 0.0259*** | 0.0127 | | | 0.0183* | 0.0127 |
| | (4.25) | (1.26) | | | (1.80) | (1.25) |
| Corruption experiences | | | 0.301*** | | 0.305*** | |
| | | | (9.00) | | (9.09) | |
| Corruption perceptions | | | | −0.00537 | | 0.00135 |
| | | | | (−0.19) | | (0.05) |
| N | 48774 | 48774 | 48774 | 48774 | 48774 | 48774 |
| No. of countries | 90 | 90 | 90 | 90 | 90 | 90 |
| Controls | no | yes | yes | yes | yes | yes |

Estimation is by weighted least squares using sampling weights provided by Gallup, and heteroskedasiticity-consistent standard errors are clustered at the country level. T-statistics in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

who have experienced corruption or who perceive corruption to be high in their country show support for violent protest and express increased desire to permanently leave their country. In contrast however, having had a corruption experience raises the likelihood of individuals voicing their opinion to public officials. While the GWP does not ask about the nature of this interaction with a public official, it is possible that this positive correlation reflects precisely respondents complaining to public officials about their experience with corruption.

Finally, we introduce both corruption measures together with confidence in institutions as explanatory variables. Doing so sheds light on whether the effects of corruption on these outcomes operate only through confidence in institutions (in which case the corruption variables would not enter significantly), or whether there are direct effects of corruption (in which case they would enter significantly even after controlling for confidence in public institutions). In the case of corruption experiences, there seems to be fairly clear evidence of both direct and indirect effects, as both the corruption and confidence variables enter significantly. In the case of corruption perceptions however we find evidence of a direct effect only for the emigration question. Overall these findings provide some support to the findings of Putnam (2000) and Uslaner (2002) that institutional trust contributes to citizen's involvement in the political process.

## VII. Conclusions

In this paper we have used data from the Gallup World Poll, a unique and very large global household survey, to document a quantitatively large and statistically significant negative effect of corruption on confidence in public institutions. This highlights an important, but relatively under-examined, channel through which corruption can inhibit development. Our findings are robust to the inclusion of a large set of controls for country and respondent-level characteristics. In addition to considering a much larger sample of countries and a more thorough set of control variables, our main contribution relative to the existing literature is our treatment of potential endogeneity biases. We have argued that a key advantage of specific experiential questions about corruption is that they are much more plausibly exogenous to respondents' reported confidence in public institutions. As a result, the partial correlation between such questions and confidence can much more plausibly be interpreted as a causal effect from the former to the latter.

APPENDIX TABLE A. Variable Descriptions

| Variable | Wording of Question in GWP | Definition |
|---|---|---|
| Confidence in institutions | Index composed of four subcategories of this question: "In this country, do you have confidence in each of the following, or not? How about the military? Judicial system and courts? National government? Honesty of elections?" | scale of 0 to 4 with 4 indicating highest confidence |
| Corruption experiences | "Sometimes people have to give a bribe or a present in order to solve their problems. In the last 12 months, were you, personally, faced with this kind of situation, or not (regardless of whether you have the bribe/present or not)?" | dummy: 1 indicating exposure to bribery |
| Corruption perceptions | "Is corruption widespread throughout the government in this country, or not?" | dummy: 1 indicating corruption is widespread |
| Male | | Share of male respondents |
| Age | | Age in years |
| Married | "What is your current marital status?"; responses of "married" as well as "domestic partner" were aggregated to form the "Married" variable | dummy: 1 indicating married/domestic partner |
| Secondary education | "What is your highest level of education?" | dummy: 1 indicating highest level is tertiary education |
| Tertiary education | "What is your highest level of education?" | dummy: 1 indicating highest level is secondary education |
| Income | "What is your total monthly household income, before taxes? Please include income from wages and salaries, remittances from family member living elsewhere, farming and all other sources." | Income in US dollars |
| Internet access | "Does your home have access to the internet?" | dummy: 1 indicating yes |
| TV | "Does your home have a television?" | dummy: 1 indicating yes |
| Ladder of life | "Imagine a ladder numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time, assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you fell?" | scale of 0 to 10 with 10 being best life |
| Standard of living | "Are you satisfied or dissatisfied with your standard of living, all the things you can buy and do?". | (0 or 1) with 1 indicating satisfied |

*(Continued)*

APPENDIX TABLE A. Continued

| Variable | Wording of Question in GWP | Definition |
|---|---|---|
| Emotions | Index composed of three subcategories of this question: "Did you experience the following feelings during a lot of the day yesterday? How about Worry? Stress? Happiness?" | scale of 0 to 3 with 3 indicating yes to all 3 questions |
| Economy good/ bad | "Do you believe the current economic conditions in this country are good, or not?" | dummy: 1 indicating good |
| Economic outlook | "Right now, do you think the economic conditions in this country as a whole, are getting better or getting worse?" | dummy: 1 indicating better |
| Corruption trend | "Do you think the level of corruption in this country is lower, about the same, or higher than it was 5 years ago?" | dummy: 1 indicating corruption is higher |
| Religious organizations | "In this country, do you have confidence in each of the following, or not? How about religious organizations (churches, mosques, temples etc.)?" | dummy: 1 indicating confidence |
| Voiced opinion to public official | "Have you done any of the following in the past month? How about voiced your opinion to a public official?" | dummy: 1 indicating "yes" |
| Achieve change by peaceful means | "Some people believe that groups that are oppressed and are suffering from injustice can improve their situations by peaceful means alone. Other do not believe that peaceful means alone will work to improve the situation for such oppressed groups. Which do you believe?" | dummy: 1 indicating "peaceful means alone will work" |
| Like to move to other country | "Ideally, if you had the opportunity, would you like to move permanently to another country, or would you prefer to continue living in this country?" | dummy: 1 indicating "would like to move" |

APPENDIX TABLE B. Countries in Core Sample by Geographical Region

| Europe & Central Asia | East Asia & Pacific | South Asia | Latin America & Caribbean | Sub-Saharan Africa | Middle-East & North Africa | High income: OECD | High income: non-OECD |
|---|---|---|---|---|---|---|---|
| Armenia | Cambodia | Bangladesh | Argentina | Botswana | Algeria | Australia | Estonia |
| Azerbaijan | Indonesia | India | Bolivia | Burkina Faso | Djibouti | Austria | Israel |
| Belarus | Laos | Nepal | Brazil | Burundi | Iran | Belgium | Malta |
| Hungary | Malaysia | Pakistan | Chile | Cameroon | Lebanon | Canada | Trinidad & Tobago |
| Latvia | Mongolia | Sri Lanka | Colombia | Chad | | Denmark | |
| Lithuania | Philippines | | Costa Rica | Ethiopia | | Finland | |
| Moldova | Taiwan | | Dominican Rep. | Ghana | | France | |
| Poland | Thailand | | Ecuador | Kenya | | Germany | |
| Russia | Vietnam | | El Salvador | Liberia | | Ireland | |
| Turkey | | | Guatemala | Madagascar | | Italy | |
| Ukraine | | | Haiti | Mauritania | | Japan | |
| | | | Honduras | Niger | | Luxembourg | |
| | | | Mexico | Senegal | | Netherlands | |
| | | | Nicaragua | Sierra Leone | | New Zealand | |
| | | | Panama | Tanzania | | Norway | |
| | | | Paraguay | Togo | | Portugal | |
| | | | Peru | Uganda | | South Korea | |
| | | | Uruguay | Zambia | | Spain | |
| | | | Venezuela | | | Sweden | |
| | | | | | | United Kingdom | |

# REFERENCES

Acemoglu, Daron, Simon Johnson, and James A. Robinson 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review*, 91(5), 1369–1401.

Anderson, Christopher J., and Yuliya V. Tverdova 2003. "Corruption, Political Allegiances, and Attitudes toward Government in Contemporary Democracies." *American Journal of Political Science*, 47(1), 91–109.

Azfar, Omar, and Peter Murrell 2009. Identifying Reticent Respondents: Assessing the Quality of Survey Data on Corruption and Values, Economic Development and Cultural Change, University of Chicago Press, Vol. 57(2), 387–411.

Bratton, Michael 2007. Are You Being Served? Popular Satisfaction with Health and Education Services in Africa, Afrobarometer, Working Paper No. 65.

Catterberg, Gabriela, and Alejandro Moreno 2005. "The Individual Bases of Political Trust: Trends in New and Established Democracies." *International Journal of Public Opinion Research*, 18(1), 408–443.

Chang, Eric C.C., and Yun-han Chu 2006. "Corruption and Trust: Exceptionalism in Asian Democracies?." *The Journal of Politics*, 68(2), 259–271.

Cho, Wonbin, and Matthew F. Kirwin 2007. A Vicious Cycle of Corruption and Mistrust in Institutions in Sub-Saharan Africa: A Micro-Level Analysis, Afrobarometer Working Paper, No. 71, Michigan State University.

Clausen, Bianca, Aart Kraay, and Peter Murrell 2010. Does Respondent Reticence Affect the Results of Corruption Surveys? Evidence from the World Bank Enterprise Survey for Nigeria. World Bank Policy Research Department Working Paper No. 5415.

Conley, Timothy, Christian Hansen, and Peter Rossi forthcoming. "Plausibly Exogenous." *Review of Economics and Statistics*.

Deaton, Angus 2008. "Income, Health, and Wellbeing Around the World: Evidence from the Gallup World Poll." *Journal of Economic Perspectives*, 22(2), 53–72.

——— 2009. Aging, Religion, and Health, National Bureau of Economic Research Working Paper No. 15271.

Deaton, Angus, Jane Fortson, and Robert Tortora 2009. Life (Evaluation), HIV/AIDS, and Death in Africa, National Bureau of Economic Research Working Paper No. 14637.

Della Porta, Donatella 2000. "Social Capital, Beliefs in Government, and Political Corruption," in Susan J. Pharr, and Robert D. Putnam eds.: *Disaffected Democracies: What's Troubling the Trilateral Countries?*, Princeton, NJ: Princeton University Press.

Easton, David 1965. *A Systems Analysis of Political Life*, New York: John Wiley.

——— 1975. "A Re-Assessment of the Concept of Political Support." *British Journal of Political Science*, 5(4), 435–457.

Gandelman, Néstor, and Rubén Hernández-Murillo 2009. "The Impact of Inflation and Unemployment on Subjective Personal and Country Evaluations." *Federal Reserve Bank of St. Louis Review*, 91(3), 107–126.

Gibson, James L., and Gregory A. Caldeira 1995. "The Legitimacy of Transnational Legal Institutions: Compliance, Support, and the European Court of Justice." *American Journal of Political Science*, 39(2), 459–89.

Gibson, James L., Gregory A. Caldeira, and Lester K. Spence 2003. "Measuring Attitudes toward the United States Supreme Court." *American Journal of Political Science*, 39(2), 354–367.

Helliwell, John F. 2008. Life Satisfaction and Quality of Development, National Bureau of Economic Research Working Paper No. 14507.

Helliwell, John F., Christopher P. Barrington-Leigh, Anthony Harris, and Haifang Huang 2009. International Evidence on the Social Context of Well-Being, National Bureau of Economic Research Working Paper No. 14720.

Hellman, Joel, and Daniel Kaufmann 2004. "The Inequality of Influence". Available at SSRN: http ://ssrn.com/abstract=386901 or doi:10.2139/ssrn.386901.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi 1999. Governance Matters, World Bank Policy Research Department Working Paper No. 2196.

Kaufmann, Daniel, and Shang-Jin Wei 2000. "Does "Grease Money" Speed Up the Wheels of Commerce?." IMF Working Papers, 00/64, Washington DC: International Monetary Fund.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi 2008. "Governance Matters VII: Aggregate and Individual Governance Indicators 1996-2007." Policy Research Working Paper, 4654, Washington DC: The World Bank.

Kaufmann, Daniel, and Joel Hellman 2004. "Political Inequality and the Subversion of Institutions in Transition Economies", in Janos Kornai, and Susan Rose-Ackerman (eds). "Building a Trustworthy State in Post-Socialist Transition", Palgrave-MacMillan.

Knack, Stephen, and Philip Keefer 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." Economics and Politics, 7(3), 207–227.

——— 1997. "Why Don't Poor Countries Catch Up? A Cross-National Test for an Institutional Explanation." Economic Inquiry, 35(3), 590–602.

Kraay, Aart forthcoming. "Instrumental Variables Estimation with Uncertain Exclusion Restrictions: A Bayesian Approach." Journal of Applied Econometrics.

Krueger, Alan B., and Jitka Malečková 2009. "Attitudes and Action: Public Opinion and the Occurrence of International Terrorism." Science, 235, 1534–1536.

Lambsdorff, Johann Graf 2007. The Institutional Economics of Corruption and Reform: Theory, Evidence, and Policy, Cambridge: Cambridge University Press.

Lavallée, Emmanuelle, Mireille Razafindrakoto, and Francois Roubaud 2008: Corruption and Trust in Political Institutions in Sub-Saharan Africa, Afrobarometer, Working Paper No. 102.

Leamer, Edward E. 1981. "Is it A Supply Curve or Is it a Demand Curve? Partial Identification Through Inequality Constraints." Review of Economics and Statistics, 63(3), 319–327.

Leontief, Wassily 1929. "Ein Versuch Zur Statistischen Analyse von Angebot und Nachfrage (An Inquiry on the Statistical Analysis of Supply and Demand)." Weltwirtschaftliches Archiv, 30(1), 1–53.

Mauro, Paolo 1995. "Corruption and Growth." The Quarterly Journal of Economics, 110(3), 681–712.

Méon, Pierre-Guillaume, and Khalid Sekkat 2004. "Does the Quality of Institutions Limit the MENA's Integration in the World Economy." The World Economy, 27(9), 1475–1498.

Méon, Pierre-Guillaume, and Khalid Sekkat 2005. "Does Corruption Grease or Sand the Wheels of Growth?." Public Choice, 122(1), 69–79.

Mishler, William, and Richard Rose 2001. "What are the Origins of Political Trust? Testing Institutional and Cultural Theories in Post-Communist Societies." Comparative Political Studies, Vol. 34(1), 30–62.

——— 2005. "What Are the Consequences of Trust? A Test of Cultural and Institutional Theories in Russia." Comparative Political Studies, 38(9), 1050–1078.

Mo, Pak Hung 2001. "Corruption and Growth." Journal of Comparative Economics, 29(1), 66–79.

Nevo, Aviv, and Adam Rosen forthcoming. "Inference with Imperfect Instrumental Variables." Review of Economics and Statistics.

Newton, Kenneth, and Pippa Norris 2000. "Confidence in Public Institutions: Faith, Culture, or Performance?," in Susan J. Pharr, and Robert D. Putnam: Disaffected Democracies: What's Troubling the Trilateral Economies, Princeton, NJ: Princeton University Press.

Ng, Weiting, Ed Diener, Raksha Aurora, and James Harter 2008. "Affluence, Feelings of Stress, and Well-Being." *Social Indicators Research*, doi:10.1007/s11205-008-9422-5.

North, Douglass C. 1990. *Institutions, Institutional Change, and Economic Performance*, New York: Cambridge University Press.

Pelham, Brett, Steve Crabtree, and Zsolt Nyiri 2009. "Technology and Education." *Harvard International Review*, Summer, 74–76.

Pellegrini, Lorenzo, and Reyer Gerlagh 2004. "Corruption's Effects on Growth and its Transmission Channels." *Kyklos*, 57(3), 429–456.

Pharr, Susan 2000. "Officials' Misconduct and Public Distrust: Japan and the Trilateral Democracies," in Susan J. Pharr, and Robert D. Putnam eds.: *Disaffected Democracies: What's Troubling the Trilateral Countries?*, Princeton, NJ: Princeton University Press.

Putnam, Robert D. 2000. *Bowling Alone*, New York: Simon & Schuster.

Rodrik, Dani, Arvind Subramanian, and Francesco Trebbi 2004. "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." *Journal of Economic Growth*, 9(2), 131–165.

Rose, Richard, William Mishler, and Christian Haerpfer 1998. *Democracy and its Alternatives: Understanding Postcommunist Societies*, Baltimore: The Johns Hopkins University Press.

Sacks, Audrey 2011. "The Antecedents of Approval of the Incumbent Government and Trust in Government in sub-Saharan Africa, Latin America, and Six Arab Countries". Manuscript, the World Bank Institute.

Seligson, Mitchell A. 2002. "The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries." *The Journal of Politics*, 64(2), 408–433.

Stevenson, Betsey, and Justin Wolfers 2008. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox." *Brookings Papers on Economic Activity*, Spring, 1–87.

Uslaner, Eric M. 2002. *The Moral Foundations of Trust*, Cambridge: Cambridge University Press.