THE POWER OF EXAMPLE: CORRUPTION SPURS CORRUPTION[i]

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Abstract

Does political corruption erode civic values and foster dishonest behavior? I test this hypothesis in the context of Mexico, by combining data on local government corruption and cheating on school tests. I find that, following revelations of corruption by local officials, secondary students' cheating on cognitive tests increases significantly. The effect is large and robust and it persists for over one year after malfeasance is revealed. These findings are validated by evidence from individual survey data documenting that individuals interviewed right after corruption is revealed report being less honest, less trustworthy and more prone to think that cheating is necessary to succeed than do similar individuals interviewed just before.

JEL Codes: D73, P16, Z1, A13, O12, H72, K42.

Key words: Corruption, Social Norms, Culture, Leadership, Civic Values

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1 Introduction

Poor institutions and unethical norms are likely causes of political corruption. But what is the origin of these norms? Is there a reinforcement mechanism by which political corruption, in turn, fosters dishonest norms among the citizens?

Although the theoretical literature on social norms transmission through leadership (Acemoglu and Jackson (2014), Tabellini (2008)) suggests that, indeed, citizens may adopt the norms that they observe in the leaders' behavior, the empirical evidence is scarce. Various studies find a correlation between perceived government corruption and, for instance, citizens' dishonesty (Fisman and Miguel (2007), Barr and Serra (2010), Gächter and Schulz (2016)). However, the underlying causality still remains unclear or, in the best case, limited to laboratory experiments (d'Adda et al. (2017)).

I provide evidence on this causal relationship in the context of an anti-corruption program in Mexico that audits the use of federal funds by recipient municipalities.[1] In particular, I show that publicly exposed corruption perpetrated by leaders increases citizens' dishonest behavior, as measured by secondary school cheating rates on school tests. Additionally, it spurs a significant deterioration in citizens' values related to honesty, rule observance and trustworthiness. The evidence points to the self-reinforcing effect of corruption.

The framework is especially suitable to understanding the effect of the leaders' negative example on citizens' behavior for various reasons. First, the independent audit reports were published two years after the actual corruption occurred. This allows me to differentiate the effect of corruption itself from that of the disclosure of corruption (i.e., when the leader sets the negative example). Second, schools did not punish students for cheating. This allows me to rule out any interpretation related to a change in the perceived expected cost of breaking the rules and lets me focus

[1] Some papers have used these and other audits as objective measures of corruption: for example, Avis, Ferraz and Finan (2018), Ferraz, Finan and Moreira (2012), Ferraz and Finan (2011), Ferraz and Finan (2008) in Brazil and Chong et al. (2014) and Larreguy, Marshall and Snyder Jr (2014) in Mexico.

on a cultural channel.[2]. Finally, because legal punishment to this type of corruption was virtually nonexistent, I can interpret the results as the effect of unpunished corruption on dishonesty.

To identify a causal effect, I use different data sources and methods. First, I combine a municipality-level dataset with the result of the audit reports and a school-grade-year-level dataset with cheating data on compulsory standardized exams detected by software.[3] I then exploit the time-space variation in the revelation of corruption audits and estimate a generalized difference-in-differences model with school, grade and year fixed effects. In addition, I control for time-varying municipality characteristics and municipality-specific linear time trends, to take into account the presence of potential differential trends in cheating across municipalities due to unobserved local time-varying effects. I also control for a dummy indicating whether an audit report was released to be able to compare cheating in municipalities that were audited in the same year but that showed different corruption levels.

To support the internal validity of the estimations, I also test the pre-treatment and post-treatment effects using an event-study type of model in the spirit of Granger (1969). I show that there were no anticipation effects, meaning that people did not react to actual corruption but to the publicity about corruption two years later.

I find that, following revelations of corruption by local officials two years after it occurred, secondary school students are 10% more likely to cheat on standardized tests (from 4% to 4.4%). The effect seems to be more pronounced for older students, who are arguably more exposed to political discussions within and outside the family.[4]

[2]In the paper I show suggestive evidence consistent with this. In particular, I show that the effect of corruption on cheating is large even in schools in which the likelihood of catching a student cheating is low. An interesting point to emphasize is that, although there was no punishment for cheating, parents were informed about the potential cheating of their children in the same platform they were informed about their score. This means that students had an incentive to perform well and to be honest, in case they thought their parents would value honesty.

[3]The algorithm identifies only cheating among students and does not identify teacher-led cheating. Refer to the data section for a detailed explanation or see Jacob and Levitt (2003).

[4]Other papers show conceptually similar results, where exposure to events have a different impact depending on the age of the subject. An example of this is what Madestam, Yanagizawa-Drott et al. (2011) find in terms of the effect of attending a 4$^{\text{th}}$ of July parade on political preferences. In their case, the largest effect is concentrated among students ages nine to 13. The psychology

The effect is also robust to the inclusion/exclusion of different set of controls (for example, municipality trends or time-varying municipality characteristics such as homicides rate, local tax collections or political variables), definitions of corruption and types of models. Using the event-study model, I also show that the effect persists for one additional period after exposure to corruption.[5]

One possible mechanism to explain the main effect is a process of social learning whereby people observe their leaders' behavior (for instance, through the media), learn from their example on social norms and change their own intrinsic values as a result.[6] I provide suggestive evidence consistent with this hypothesis. First, I exploit within-municipality variation in households' radio ownership rates and variation across municipalities in the number of local radio stations and show that the effect is concentrated among those areas with potentially higher exposure to news. This suggests that media was one channel by which the news on government corruption were disseminated.

Second, I show that the impact of corruption on cheating is significantly larger in municipalities in which the incumbent party was originally thought to be honest. This suggests that corruption scandals provided citizens with new information on social norms in their communities.

Third, I directly estimate the effect of corruption revelation on personal values of the adult population. I combine the municipality-level dataset on corruption with the Mexican Family Life Survey (an individual-level longitudinal survey) and exploit the plausibly exogenous difference in the timing of the interviews relative to the timing of the release of the corruption reports. I then estimate a differences-in-differences

literature on children's behavior is also consistent with this idea. Hays and Carver (2014), for example, show that when parents lie to their children, they tend to be more dishonest, but this is true only for those old enough to internalize the treatment. As I explain in the corresponding section, the evidence of differential effect on secondary versus primary school students is not definitive but suggestive.

[5]Each year, students pass to the next grade, and, therefore, the older cohort exits the sample and is replaced by a younger cohort that is less affected by the original exposure to corruption. For this reason, one would expect to see a phasing out of the effect.

[6]This is consistent with the social learning theories in sociology (see Bandura and Walters (1977)) and also with the literature on social transmission of values in economics, in line with Bisin and Verdier (1998), Bisin and Verdier (2010) or Acemoglu and Jackson (2014).

model using the month of the release of the audit reports as the threshold dividing ''before'' and ''after'' in each year. I also control for municipality fixed effects, time-varying municipality variables and a set of individual-level characteristics. Thus, I compare the answers of people with similar age, living in the same municipality and with similar job status and educational levels, who were randomly interviewed before or after the date that the audit report was released. I find that, after malfeasance becomes public, citizens significantly change their self-declared values related to honesty, trustworthiness and the importance of abiding by the rules.

Finally, I present suggestive evidence against possibly competing hypotheses. An alternative explanation could be, for instance, that cheating was driven by teachers and not by students. A plausible story could be that mayors were politically connected with principals and teachers and attempted to inflate test scores around elections, especially if reports showed that they were corrupt (in line with evidence provided by Brollo, Kaufmann and La Ferrara (2017) and Akhtari, Moreira and Trucco (2017) in Brazil). As suggestive evidence against this hypothesis, I show that the effect is not larger among public schools (which are more likely to be politically influenced than private schools) or during election years. Another plausible hypothesis could be that students interpreted the release of corruption reports as a signal that punishment for misbehaving was mild (and, thus, there was a reduction in the expected punishment for cheating). As suggestive evidence against this hypothesis, I show that the main effect is not influenced by the size of the classroom (a proxy for the risk of being caught cheating). This suggests that, even in environments in which the likelihood of being discovered is low (and, thus, the harshness of the punishment should not be too relevant), the revelation of corruption has a large effect on cheating.

This paper is related to three different strands of the literature. First, it contributes to the literature on the determinants of civic attitudes by showing how a transient factor (the leaders' negative example) shapes citizens' values and honesty. This relates to other papers showing the effect of present events on different values and beliefs. For example, Ananyev and Guriev (2013) show that recessions have a negative impact on trust, and Depetris-Chauvin, Durante and Campante (2018)

show that individuals are more likely to trust people of other ethnicities after a victory of their country's national football team. On a similar note, Murthi and Tiongson (2009) find that having experienced socialism increases the preference for redistribution, Alesina and Fuchs-Schündeln (2007) show that having lived under a communist regime affects one's preferences for redistribution among the East Germans; Di Tella, Galiani and Schargrodsky (2007) show that giving land titles to squatters has an immediate effect on their beliefs about free markets; and Giuliano and Spilimbergo (2013) provide evidence showing that growing up during a recession affects future market beliefs.

Second, this paper adds to the growing literature on the role of leaders and the power of example. In particular, Acemoglu and Jackson (2014) provide a setting in which to study leadership-driven changes in social norms. My paper provides the first empirical evidence that this mechanism applies to the formation of civic norms. This is also consistent with the sociological intuitions behind social learning theory (Bandura and Walters (1977), Akers et al. (1979) and Akers (2011)), according to which people engage in dishonest behavior in imitation of others. The paper also relates to the literature on the economics of organizations, particularly to the models of leading by the example developed by Hermalin (1998). More specifically, the results of this paper are aligned with those found by d'Adda et al. (2017). Using a laboratory experiment, the authors show empirically that leaders influence the ethical conduct of followers (firms) through their prominent corrupt statements.

Finally, this paper points to a new channel by which corruption harms development: by affecting the formation of the culture of young generations. We already know that corruption affects efficiency (Olken and Pande (2012)), growth (Mauro (1995)), the allocation of government expenditures (Mauro (1998), Svensson (2005)), the provision of public goods (Del Monte and Papagni (2001)), education (Ferraz, Finan and Moreira (2012)), and private investment (Svensson (2003), for instance). This paper adds a new, important item to the existing literature on the costs of corruption.

The paper is structured as follows. Section 2 describes the data. Section 3 presents the main specification. Section 4 contains the main results of corruption

on cheating, robustness checks and the pre- and post-treatment analyses. Section 5 contains the main results of corruption on civic values. Section 6 presents suggestive evidence on potential mechanisms. Concluding remarks follow in Section 7.

2 Data

2.1 Cheating Data

The main outcome to be tested is the proportion of students that cheated on a standardized exam. The exam, called "Prueba Enlace Básica," is a compulsory national standardized test implemented by the Federal Government (Mathematics and Spanish plus another additional subject) each year between 2006 and 2013.[7] Initially, from 2006 to 2008, the test given only to primary students in third through sixth grades (8-11 years old) and to students in their third year (14-15 years old). In 2009, students in the first and second years of secondary school were included in the test, which was typically taken between mid-April and mid-July in both public and private schools. The test was created and coordinated by the Federal Ministry of Public Education and organized locally by the equivalent authority in each state. For security reasons, each test was printed and distributed by a Federal Commission called the National Commission of Free Text-Books. Besides the students, many people were involved during the administration of the test: an external coordinator (representing the Federal Ministry of Public Education); the schoolteachers; and other external viewers invited by the schools. Ultimate responsibility for the correct administration of the test rested with the external coordinator, who had to distribute the material within the school, verify that there were sufficient external supervisors and certify that each schoolteacher was allocated to a different classroom from the one in which they usually taught. Finally, to identify students who still somehow

[7] Although the test is compulsory, the effective coverage varied slightly through the years due to administrative problems in the implementation. Therefore, there are periods with more observations and periods with fewer. The point estimates of the main results using only the schools that were present in each period of the sample are almost identical and the significance unaltered, even with larger standard errors. Tables available upon request.

managed to cheat, the results were analyzed by a software program designed to detect student-to-student cheating. The software uses two complementary algorithms: a K-Index and a Scrutiny Method, both designed to detect too-similar patterns of incorrect answers between any pair of tests within a classroom. The variable I use as the objective measure of dishonesty is the proportion of cheaters per classroom identified by the software.[8]

In this paper, I focus on the years with valid observations of cheating and corruption: 2006 to 2013. Descriptive statistics of cheating can be found in Table A1 in the Appendix (also, A2 in the Appendix show a kernel estimation of the distribution).

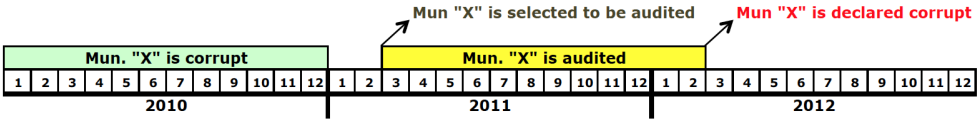
2.2 Corruption Data

The explanatory variable is government corruption. Instead of using perception variables, I focus on directly observed (and published) corruption, measured by a federal independent agency. In Mexico, a large proportion of public funds is spent at the local level, and, therefore, municipalities (there are 2,446 in the country) represent a potentially important source of corruption. The audits, performed by the Auditoría Superior de la Federación (ASF), an autonomous, independent agency

[8]The K-Index method has been widely used by testing companies. In particular, it is the method used to detect cheating in tests such as the GRE, the SAT and the TOEFL. The original algorithm was popularized by Holland and Thayer (1986), and a comprehensive review of the methods can be found in Cizek (1999). Broadly, this kind of software computes a similarity index of wrong answers between all the possible pairs of exams within a classroom and compares it with a theoretical distribution of similarities under the no-copy hypothesis, conditional on a set of parameters that include the number of questions, options, students, correct answers and confidence. The software then identifies as cheaters those pairs of exams in which the similarity index of wrong answers is unusually high. It is important to emphasize that the software identifies cheating between two students within a classroom, but it is not designed to capture the usual methods of teachers cheating, such as altering students' answers on answer sheets or directly providing correct answers to students. To detect this type of cheating, it is necessary to identify ''unusually good'' results instead of a similar pattern of wrong answers (if the teacher dictates the right answers, or some of the right answers, then the wrong answers are unlikely to be particularly similar). Identifying ''unusually good'' results is not straightforward because the counterfactual is difficult to assess. In principle, ''unusually good'' must be defined in terms, for example, of observable socioeconomic characteristics of the school, the students and their community. The statistics literature for identifying whether a student copied answers from another student was developed very early in the 1970s, while the first paper that proposed a method to identify teacher-induced cheating is Jacob and Levitt (2003).

that is formally part of the Congress, clearly reveal whether any deviation of the funds has occurred. For administrative reasons, until 2015, the results were published with a lag of around two years after the actual corruption occurred, which is crucial for the identification strategy of the paper. Each year, the ASF defined and announced which municipalities were going to be audited. The process itself would take a whole year, and, therefore, the results were not published until February of the following year, as Figure I illustrates with a hypothetical example of a corrupt municipality.

Figure I: Hypothetical Audit Timeline

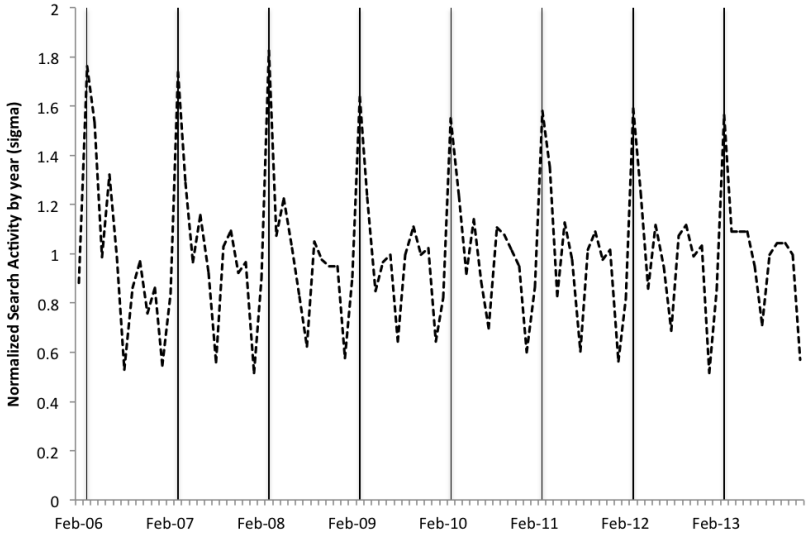


Note: The figure illustrates a hypothetical example in which the mayor of Municipality "X" diverts funds from their legal purposes during 2010. At the beginning of 2011, the municipality is selected to be audited; the process takes a year, and in February of 2012, the results, which correspond to 2010, are published.

One of the most relevant funds that is audited each year is a municipal group of funds transferred from the federal government under the label "Municipal Fund for Social Infrastructure" (FISM in Spanish). The FISM is important not only because of the amount of money that it represents (more than 25% of the local budget, on average), but also because it is earmarked to improve infrastructural projects targeting the poor; thus, events of malfeasance related to them tend to reach the media very quickly. Following Larreguy, Marshall and Snyder Jr (2014), Arias et al. (2018) and Chong et al. (2014), I focus on the results of these Funds audits to identify corruption. In particular, the report for this item presents the share of "unauthorized use" of the FISM, which is the variable I use to measure corruption in a municipality. Importantly, each year, the audit reports were released approximately three months before school tests were taken. The release of municipal audit results each February is a popular event at the local level. Figure II shows the Google searches related

to audit reports by month in the period 2006-2013, normalized by yearly average. There is a clear peak every year precisely in the month of February, when the reports are released. News reports typically cover local mayors, with a focus on cases of unauthorized spending.[9]

Figure II: Google Searches of ''Auditoria'' in Mexico



Note: Extracted from Google Trends. The word ''auditoria'' means ''audit'' in Spanish. Horizontal bars mark the month of February. Values normalized by yearly mean.

In the sample period, there were 898 audits, an average of 128 per year. More than 54% of the audits revealed some degree of corruption, and, on average, 12% of the funds were labeled as unauthorized spending (more details are presented in Table A2 in the Appendix). Up to 2013, more than a quarter of the municipalities

[9]When there are irregularities, the results of these audits are typically published very promptly by the media, especially at the local level. There are many examples online. See, for instance: ''Abarca embezzles 66 million pesos in 2013'' (`http://www.milenio.com/politica/Jose_Luis_Abarca_Guerrero\discretionary{-}{}{}ASF_Abarca_desvio\discretionary{-}{}{}Abarca_Iguala_Guerrero_0_467353346.html`) or ''88 million pesos disappear under former Mayor of Humantla'' (`http://www.e-tlaxcala.mx/nota/2014-02-11/municipios/ex-alcalde-de-huamantla-desaparece-88-mdp`).

were audited at least once.[10]

2.3 Personal Values Data

To test the hypothesis about the channels, I complement the analysis with survey data on values. In particular, I use the longitudinal Mexican Family Life Survey (MxFLS).[11] Currently, the MxFLS contains information on an 11-year period (with some gaps), collected in three waves: 2002, 2005-2007 and 2009-2013. I focus on the questions related to values on honesty, rule abidance and self-declared trustworthiness on five items that are relevant to the analysis.[12] I then build four different aggregated indices of civic-mindedness (including the first principal component of a PCA), which are summarized in Table A3 in the Appendix.

2.4 Political Perception Data

I exploit two data sources regarding political parties and party-corruption perception to estimate heterogeneous effects. First, I use a database containing all the mayors and their party affiliations for the period of analysis. These data come from the National Institute for Federalism and Municipal Development (INAFED, in Spanish), an official federal but decentralized organization that is in charge of coordinating policies between different government levels. The institution maintains a database called "Municipality Encyclopedia" from local government bodies such as municipalities and delegations. This dataset was combined with official data from the municipal governments' websites in case information was missing.

Second, to measure the perception of transparency and honesty of each party, I use a state-representative survey implemented by the so-called "Gabinete de Comunicación Estratégica," a private, independent firm that assesses public opinion. One question in the survey asks, ''If the political parties in the state X were persons,

[10]Figure A1 in the Appendix shows a kernel density estimation of the amount of unauthorized expenditures.

[11]http://www.ennvih-mxfls.org/english/index.html.

[12]The exact wording of the questions can be found in the Appendix.

which party would you say is the most Corrupt?''. People chose the adjectives they identified most strongly with each of the three main parties in every state. I use the percentages assigned to ''Most Corrupt'' to classify parties according to citizens' perceptions. I then match these percentages with data on the incumbent party in each period and municipality. This allows me to have a measure of the proportion of people that perceives the party in power as corrupt. The survey is not performed on a regular basis, and the most recent version corresponds to the first year of this paper's sample period. The results of the survey are normalized to a 0-100 scale and summarized in the Appendix (Table A4).

Although these three parties cover most of the sample (around 75%), many municipalities were governed by small (sometimes local) parties or by coalitions that, in some cases, were strongly influenced by one the big three parties. To classify the smaller parties or coalitions according to their level of perceived corruption, I use an additional dataset created by an independent Think Tank (Cidac) called ''Electoral Data-Base,'' which includes the main national party (usually one of these three) that supports the incumbent (if any) and the main parties represented in each coalition.

3 Empirical Model

I exploit the high detail and panel structure of the data (at the year-school-grade-level) and the fact that not all the municipalities are audited at the same time to estimate a multi-year Differences-in-Differences model. More specifically, I estimate the following equation:

$$PropCheat_{sgt} = \alpha Corrupt_{mt} + \nu ReportReleased_{mt} + \phi_s + \rho_g + \gamma_t + \lambda X_{mt} + \epsilon_{sgt} \tag{1}$$

Where $PropCheat_{sgt}$ is the proportion of students that cheated in school s, in grade g during year t; and $Corrupt_{mt}$ is a variable indicating that there was corruption detected in the municipality m during the year t. This means that the year t corresponds to the period in which the results of the audit were published, not to the year in which corruption actually occurred. A full set of controls at various levels is

included in the model, which allows me to compare very similar observations: fixed effects at the school level ϕ_s to rule out the possibility of confounding the effect of corruption with the idiosyncratic time-invariant effect of the schools; grade fixed effects (1^{st} , 2^{nd} , 3^{rd} grade, ρ_g); and period effects (γ_t) to control for any year-specific shock. I also include a complete set of time-varying controls at the municipality level (X_{mt}): dummies for political parties - for both the year of the actual corruption event and the year when the report was released -; a dummy indicating if the municipality was audited in the past; and a dummy indicating if the municipality was already corrupt in the past; plus homicides per-capita by municipality-year[13]; the amount of local taxes collected in each year-municipality; and a dummy that takes a value of 1 if there was political alignment between local and national governments, and 0 otherwise. I also include municipality time-specific linear trends to take into account the presence of potential differential trends in cheating across municipalities due to unobserved local time-varying effects. All results are clustered at the municipality level to allow for intra-municipality serial correlation, and there are around 50 schools per municipality, on average.

In every specification, I also include a dummy indicating if there was an audit report (which could show corruption or no corruption) released for any given municipality in each year ($ReportReleased_{mt}$). This allows me to rule out any potential problem related to selection on auditing (e.g., if the timing of the audit was not random). The inclusion of this dummy is also important for the interpretation of the results: the parameter of interest (γ) measures the difference between cheating in a school located in a municipality that was audited and declared corrupt in a given year versus another school located in a municipality that was audited and declared non-corrupt in a given year.

Finally, I restrict the sample to only those municipalities that were audited at least once during the sample period to reduce any potential problem that could

[13]Crime in Mexico is a particularly relevant variable that has been shown to be correlated with a number of relevant economic outcomes such as firm-level activity (Montoya (2016)) or property prices (Ajzenman, Galiani and Seira (2015)). I use a dataset containing a municipality-monthly measure of all homicides in Mexico compiled by the Mexican National System of Public Health Information, which contains monthly-municipality census data on homicides.

arise if the group of municipalities that were audited were systematically different from those that were never audited. Results are presented in the following section, including a set of different robustness tests.

4 Main Results and Robustness

The main results for secondary school students are shown in Table I. Five different columns are shown for robustness, adding a different set of controls in each column.

In every specification, I find positive and significant results at the 5% level and of similar magnitude, regardless of the inclusion/exclusion of municipality-specific trends or municipality time-varying controls (such as homicides per capita; local tax collection; whether the municipality had already been audited or already declared corrupt in the past; party in government dummies; and a dummy indicating party alignment between local and national governments).

The magnitude of the preferred specification (column V) is sizable: cheating in corrupt municipalities increased approximately 9-10%, on average, with respect to the baseline. In Table I, I also show the estimation of the dummy variable "Report Released," which takes a value of 1 if there was an audit report released for that municipality. It is interesting to note that, although the estimation is not precisely estimated enough to detect a significant effect, the point estimate is negative and relatively sizeable. This suggests that the effect of corruption on cheating may have two sides: a positive result decreases cheating, while a negative result increases cheating (and the parameter of interest reflects the combination of both). Nonetheless, this interpretation should be taken with a grain of salt: if the timing of the release of the audit reports is not completely random, then the only parameter that would have a causal interpretation would be the one associated with the corruption variable. Controlling for the "Report Released" dummy lets me measure the effect of corruption on cheating among municipalities that were audited in the same year.

The results of the main model are also robust to different specifications and definitions of the main explanatory variable. In Table II, I show the results hold when

using different definitions of the corruption variable, when including fixed effects at municipality level (instead of school level), and when restricting the sample to keep observations of municipality-years in which a corruption report was released. In the first row (>0), I show the results of the preferred specification: a municipality is considered corrupt at any level of unauthorized expenditure greater than zero. In the second one (P15), a municipality is considered corrupt if the proportion of unauthorized expenditure is greater than the 15^{th} percentile of the sample, in the third row (P25), a municipality is considered corrupt if the proportion of unauthorized expenditure is greater than the 25^{th} percentile of the sample. Finally, in the last row (log), I use a continuous definition of corruption (the log of the proportion of corruption). For each of these models, I present the results with different set of controls (Columns I to IV) and using municipality fixed effects instead of school fixed effects (Column V). Finally, I also estimate the main model but keeping only the observations corresponding to the municipalities for which an audit report was released in any given year (that is, dropping all the municipalities/years that did not have reports in a particular year). The results are presented in Column VI.[14]

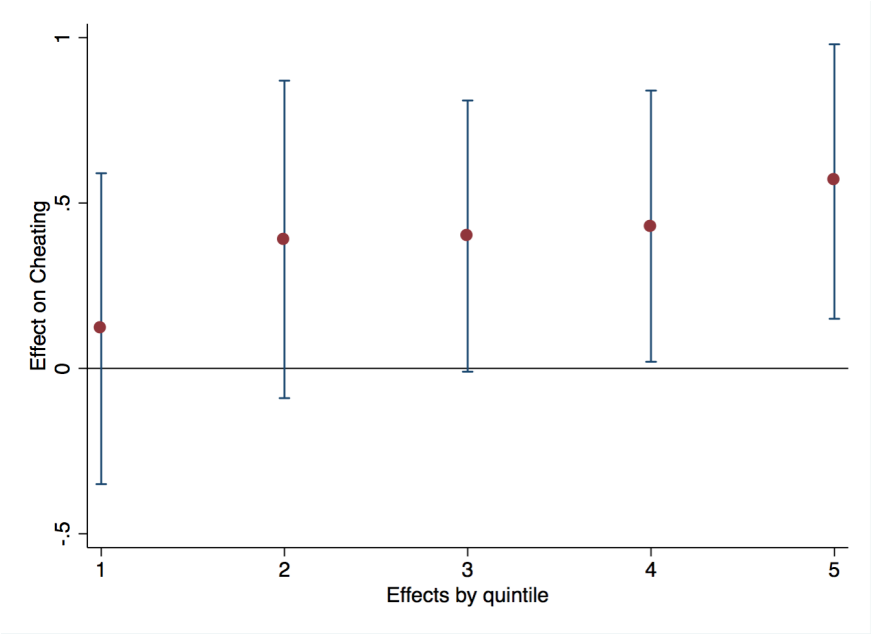
All the results remain significant and of similar magnitude, regardless of the definition of corruption and the inclusion of school or municipality fixed effects. The last row of the table, which presents the effects in logs, also adds an interesting interpretation of the results, as it shows that not only the extensive margin (corrupt versus not corrupt), but also the level of corruption, matter.

Along the same lines, it is interesting to see how how corruption has a differential effect depending on the magnitude of malfeasance. There are many reasons to think that low levels of corruption should have a smaller effect. First, they could be interpreted as administrative faults rather than as corruption. Second, it may be more difficult for a corruption scandal to became massively public if the proportion of misallocation is very low (e.g, writing a corruption story about 0.1% of public funds being diverted).

[14]Results controlling for municipality-specific linear trends are not presented in Column VI because most of the municipalities/schools are not repeated in the sample (as they were audited only once), and, therefore, trend dummies are collinear with municipality or school dummies.

In Figure III, I show the result of estimating the main equation but dividing the treatment into quintiles of corruption. As is shown, the effect seems to be monotonically increasing in the level of corruption. In turn, it becomes significant only at high levels (close to the median). Corruption seems to affect people's behavior only when its magnitude is sufficiently large.

Figure III: Main Effect by quintiles of Corruption – 95% CI



Finally, another interesting question to analyze is how corruption affects cheating at different ages. Related papers in the literature (for example, Madestam, Yanagizawa-Drott et al. (2011)) have shown that exposure to certain events may have drastically different effects on behavior, depending on the age at exposure.

Younger students are arguably less exposed to political discussions, especially in Mexico (Segovia et al. (1975)). To test this, I estimate the main model using primary school students. Although the samples may not be strictly comparable (secondary and primary schools are qualitatively different, as they are different types of institutions), the results in Table III show that, as expected, primary school students were much less affected than secondary school students by corrupt leaders, and the effect

on the former is indistinguishable from 0. Although samples might not be strictly comparable, the fact that older students (12-15 years old) changed their behavior but younger students (8-11) did not, suggests that the exposure to corruption influenced only those who were more likely to have been exposed to politics and, thus, more exposed to the treatment.

4.1 Pre-treatment and Persistence

To formally test if there were anticipation effects (leads, interpreted as a placebo) and/or persistence in the main effect during the years after corruption occurred, I estimate an event-study model in the fashion of Autor (2003). Thus, I estimate a model similar to Equation (1) but now including two leads and two lags:

$$\begin{aligned} PropCheat_{sgt} = & \sum_{l=-2}^{+2} \alpha_l Corrupt_{mt-l} + \alpha Corrupt_{mt} \\ & + \sum_{l=-2}^{+2} \nu_l ReportReleased_{mt-l} + \nu ReportReleased_{mt} \\ & + \phi_s + \rho_g + \gamma_t + \lambda X_{mt} + \epsilon_{sgt} \end{aligned} \tag{2}$$

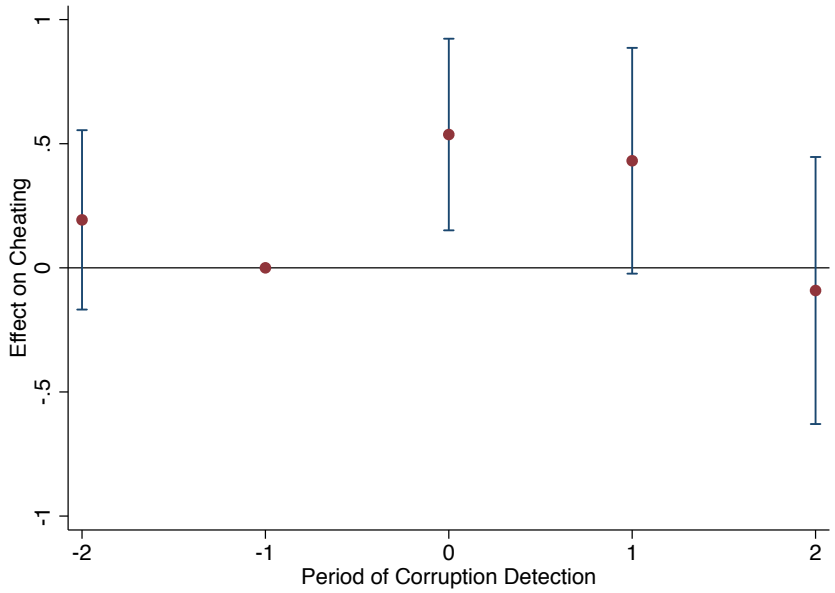
The model also controls for the "Report Released" dummy, indicating whether an audit report was released during a given year for each municipality (plus two leads and two lags of the "Report Released" dummy). Therefore, the interpretation is identical to the main model for every period.[15]

[15]The law that regulates the allocation of funds from the national government to the sub-national governments was significantly changed starting in 2014 (the decree is from December, 2013; and it impacted the audit reports corresponding to 2014 and thus released in 2016). In particular, the rules that regulate how the money from the FISM could be spent were transformed, potentially affecting the measure of unauthorized funds. Thus, to ensure comparability of my corruption indicator, I restrict the years of my sample to 2015 (which does not affect my main analysis, but restricts the number of lags to two). To sum up the reform, because of several complains about the imprecision in the way the regulation was written in regard to what was authorized (or not) to be spent, the Government altered a law through a decree, urging the Secretary of Social Development and the National Council for the Evaluation of Social Development Policy (CONEVAL, an independent gov-

As Figure IV shows, pre-treatment effects for two periods are not significant at the 5% level (or 10% level) . This is interpreted as placebo, as it shows that there are no anticipation effects. The figure suggests that the effect may have persisted for at least one period after the exposure to corruption, as the p-value for the first posttreatment period is 0.062. In the second period, after the audit reports are released (t=2), the effect becomes zero again. Students cannot be followed for more than two years; therefore, it is not possible to properly analyze the long-term persistence of the effect. However, the phasing out seen in the figure seems reasonable and consistent with a persistent effect. This is because, each year, a third of the students in the sample is replaced by a younger cohort, less affected by the exposure to past corruption, since they were exposed at a younger age. For example, in the second year post-exposure, a third of the sample consists of students who were affected by corruption when they were in the first year of secondary school; another third were in the last grade of primary school; and the remaining third were in the penultimate grade of primary school.

ernment institute in charge of measuring poverty) to create and publish a detailed catalog of specific items in which the FISM - which is supposed to target the poor - could be spent on. As a result, since 2014, the ASF uses this catalog as the instrument to determine the proportion of misallocation in the FISM. This change is evident when reviewing the reports made by the ASF, where, since the 2016 publication (analyzing the fiscal year of 2014), the audits reports document specifically the proportion of money used in items not included in the catalog. The fact that the rules became much clearer and that the catalog included a vast number of items likely impacted in the proportion of unauthorized spending from 2016 onwards (it reached less than 2% on average in 2018 versus, for instance, around 30% in 2011). The catalog and the new regulation is available online: `https://www.coneval.org.mx/Evaluacion/NME/Paginas/acuerdo_lineamientos_fais.aspx`. A non-technical explanation of the reform, described by the Ministry of Social Development is available in the following presentation: `http://www.sedesol.gob.mx/work/models/SEDESOL/Sedesol/sppe/upri/dgapl/fais/Noticias/presentaciones/03.pdf`. Finally, the official decree is available in the following link: `http://dof.gob.mx/nota_to_pdf.php?fecha=09/12/2013&edicion=MAT` (page 13, referring to the Article 33). The previous version of the law is available in the following link `http://www.diputados.gob.mx/LeyesBiblio/ref/lcf/LCF_ref18_31dic98.pdf` (first page, referring to Article 33).

Figure IV: Leads and Lags – 95% CI



Note: 95% Confidence Intervals, 1st pre-treatment period normalized to 0. Corruption defined as "proportion of unauthorized expenditure greater than zero." Controls for school fixed effect, municipality-specific linear trends and all the controls described in Section 3.

For robustness, Figure A3 in the Appendix shows the estimations of the same models with different sets of controls. The results are robust to the inclusion/exclusion of municipality linear trends and time-varying municipality characteristics. As a robustness check, I also estimate the same models but keep only the observations corresponding to the municipalities for which an audit report was released in any given year (that is, dropping all the municipalities/years that did not have reports in a particular year). I show suggestive results in the Appendix (Figure A4): the patterns remains almost unchanged, although significance is lost, as the number of observations is heavily reduced.

5 The effect of corruption on civic-mindedness

A related question, which is crucial for the interpretation of the results, is if corruption affects values related to social norms on honesty and civic-mindedness (for instance, if people learned that, to succeed in life, it is necessary to act unlawfully).

To test this, I use data from a longitudinal survey called the Mexican Family Life Survey (MxFLS). I work specifically with the five questions in the survey that refer to civic values (honesty, rule abidance, trustworthiness, cheating, etc.) and use them to construct four indices of uncivic values:[16] (1) At least one uncivic answer; (2) At least two uncivic answers; (3) First component of a Principal Component Analysis of the five questions (normalized to a 0-1 scale); and (4) the Count Index: sum of uncivic answers (min=1, max = 5).[17]

An advantage for the identification strategy is that, for administrative reasons, each wave includes three years of interviews that were conducted during different months. This means that some households were surveyed just before the audit reports were released and some just after.[18]

More specifically, I estimate a model in which I exploit the plausibly exogenous difference in the timing of the interviews relative to the timing of the release of the audit report. This allows me to estimate a Differences-in-Differences model using the month of the release of the reports as the threshold dividing before and after in each year. I am also able to control for municipality fixed effects and a set of individual-level characteristics to compare the answers of people of similar age, gender, job status and educational level and living in a municipality that was audited in a particular year, with the only difference being that some families where surveyed before the report was released and some were surveyed after. The time effects (before

[16]The exact wording of the questions and the criteria to build the indices are in the Appendix.

[17]Table A3 in the Appendix shows the descriptive statistics for these indices and for the individual questions.

[18]The MxFLS is an academic project led by Mexican and American universities (Universidad Iberoamericana and CIDE in Mexico, UCLA and Duke University in the US), unrelated to any local government. Therefore, it seems reasonable to consider that for a given municipality and year, the decision to interview a family before or after the month in which the report was released was unrelated to the characteristics of the households.

or after the cut-off month) let me control for seasonality. More specifically, I estimate the following model:

$$Values_{imtf} = \alpha CorruptAfter_{mtf} + \phi Corrupt_{mt} + \eta After_{f} + \gamma_t + \theta_m + \lambda X_{mt} + \phi Y_{imt} + \epsilon_{imt} \quad (2)$$

Where $Values_{imtf}$ represent the outcome variable(s) with answers to the different questions about values (answered by an individual i, living in municipality m during period t and interviewed before or after the month in which the audit reports were published, f); $CorruptAfter_{mtf}$ is the variable of interest, which is the interaction between $Corrupt_{mt}$ (a dummy that scores a 1 if the municipality m is corrupt during a particular period t) and $After_f$ (a dummy that gets a 1 if the interview of the individual was performed before the month of February, when the reports were released, and 0 otherwise). The model also includes municipality fixed effects (θ_m), period effects (γ_t), all the same municipality-level controls used in the main specification, plus individual-level controls (age, education and labor status dummies, ϕY_{imt}). I restrict the sample to consider all municipalities that were audited (and therefore received a corruption report) in a given year. [19]

The estimation of the main effects can be found in Table IV. The table presents four different specifications, including different sets of controls, as defined in Section 3. I present the results normalized by standard deviations to make the indices comparable. As is shown, all the point estimates of the main effect are positive and significant, with most of them at the 1% level, with a few significant at the 5% level. The magnitude of the effects is generally sizeable.[20]

These results are consistent with literatures in economics (see, for example, Bisin

[19]For any given year I consider a window of six months before the exposure to corruption and six months after the exposure and exclude the month in which the report was released.

[20]For robustness, I also present the results using different thresholds of corruption in table A5 in the Appendix. In Table V I show the result for the individual variables that compose the indices. As expected, the estimation is positive in every variable and significant in most of them. Importantly, the estimated parameter associated with the question on the importance of cheating to get ahead in life is highly significant and large. I also present the results of a placebo analysis in Table A6. Results show the insignificant effect of corruption on a set of questions unrelated to civic values.

and Verdier (1998), Bisin and Verdier (2010)), psychology (see, for example, Mazar, Amir and Ariely (2008)), and with the social learning type of theories (Bandura and Walters (1977)). This idea is also similar to Acemoglu and Jackson (2014). That paper shows that, when a leader is revealed as a good (or bad) example, people learn the new social norms and act accordingly.

6 Potential mechanisms

Why do people change behavior and self-reported values when they are exposed to government corruption? One plausible mechanism behind the main effect would be a process of social learning in which people observe their leaders' behavior, learn something new to them about social norms in their communities and change their own intrinsic values as a result. In this section, I show suggestive evidence consistent with that channel.

6.1 Corruption and local media

A fundamental question in understanding the channels by which the treatment operated is how people find out about corruption. Anecdotal evidence suggests that people are interested in the revelation of corruption (for instance, the Google searches presented in Figure II are consistent with this view). Moreover, as Larreguy, Marshall and Snyder Jr (2014) show, local media seems to be the most relevant actor in terms of dissemination (while a few TV stations are mostly national in terms of the type of news they cover, the focus of local media tends to be more local), which sounds reasonable given the high level of media penetration in Mexico.[21].

As in many developing countries, radio and television networks are the principal source of news in Mexico.

If corruption scandals are disseminated through the media, one would expect from

[21] As an example, according to the 2010 Census, more than 90% and 80% of the households had a TV or radio, respectively, at home. Moreover, according to Latinobarometro (2010), more than 50% of the population get informed by listening to the radio.

households with potentially higher exposure to media to show a larger treatment effect. To test this hypothesis, I use two data sources related to media broadcasting and consumption. First, I calculate the proportion of households that owned a radio in the 2010 census. The structure of the dataset allows me to obtain data at the locality level and, thus, to have within-municipality variability in the potential exposure to news.[22] Although average radio ownership was relatively high, there was still a considerable amount of variability (a mean of 0.59 radios per locality, a standard deviation of 0.14, a minimum of 0 and a maximum of 14).

Second, I gained access to the number of radio stations that broadcast from every municipality, compiled by the Federal Electoral Institute (IFE). These data allow me to have an objective measure of the supply of local media outlets.[23]

Figure V shows the geographical distribution of radio stations. Considering only the municipalities of the analysis, there are, on average, 3.5 stations per municipality (the standard deviation is 4.6 and the median is 2), and around half of the municipalities have at least one station.

To measure potential exposure to news, I create a locality-level indicator of ‘‘high exposure’’ combining the local radio station supply and household radio ownership, which takes a value of 1 if two conditions are fulfilled: a) the municipality in which the locality is placed has an above-median number of per-capita radio stations; and b) the proportion of household radio ownership in the locality is above the sample median of all localities. Slightly less than a quarter of the sample falls into the ”high exposure” category.

I estimate equation 1 adding an interaction between corruption and a dummy (‘‘high exposure’’). In every specification, I include the interaction between the ”Report Released” dummy and the ”high exposure” variable as a control. I also control

[22]Municipalities are divided into localities.

[23]Unfortunately, I could not retrieve reliable data on TV stations for the sample period (between 2006 and 2013). Only more recent data are available, but it would be misleading to use them because starting in 2011, there was massive change from analog to digital TV, and, therefore, the current stations are not necessarily representative of those existing until 2011. However, as Larreguy, Marshall and Snyder Jr (2014) point out, radio and TV stations were highly spatially correlated, and, therefore, conclusions should be similar using either or both types of media.

Figure V: Geographical distribution of radio stations

Note: The figure illustrates the number of radio stations (AM and FM) by municipality. Bigger dots represent a higher number of stations. There are 10 categories: 0, 1-2;2-5;5-8;9-11;12-13;14-16;17-20;21-24;25-28.

for the interaction of the treatment variable (Corrupt) with several municipality controls (local tax collections, homicides per capita and the dummy indicating if the party of the corrupt mayor was politically aligned with the national party in power). I also include interactions of those municipality controls with the "Report Released" dummy.

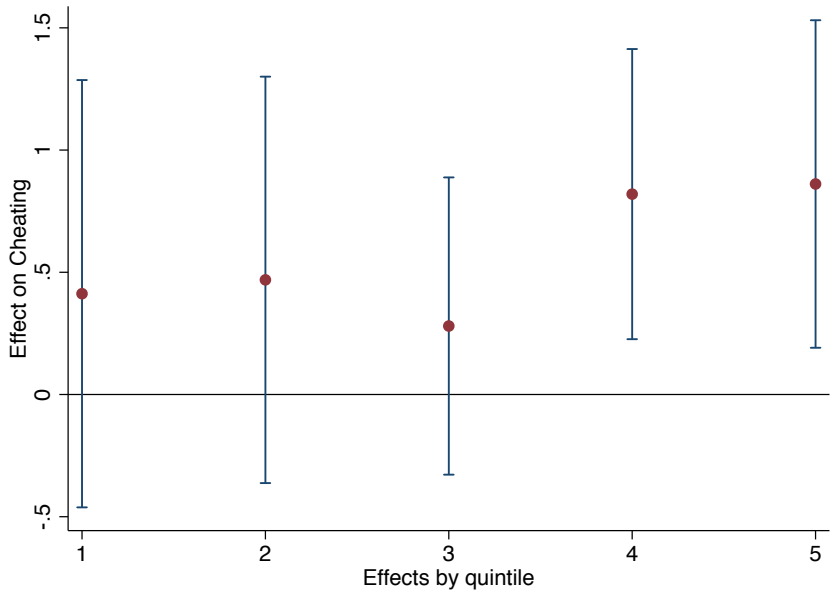
In Table VI (rows I and II), I show the results using a different set of controls. The effect of corruption on cheating becomes significant (and of a large magnitude) only in localities where there is a high exposure to media. The difference from the low-exposure municipalities is significant at least at the 10% level in every specification.

To complement this, I also study the heterogeneous effect by different levels of potential exposure to media. I construct a continuous indicator which takes a 0 value if there are no radio stations in the municipality where the school is placed

and X, otherwise; where X is the average household radio ownership at the locality level. This indicator provides within-municipality variability of potential radio consumption (at-home radio availability) but is altered by the actual supply of local radio in the municipality. The underlying rationale is that - within a certain municipality - the higher is the propensity to own a radio, the higher the likelihood of hearing about the corruption scandals, but only if there is a local radio broadcaster to actually disseminate the local news.

In Figure VI, I show the heterogeneous effect by quintiles of potential exposure to media. The average effect seems to be increasing as access to media grows, and it is only significant only for the last two quintiles.

Figure VI: Main Effect by quintiles of exposure to media – 95% CI



Note: Clustered Standard Errors in Parentheses (municipality).
Model includes the full set of controls as described in Section 3, plus the interaction of the "corrupt" and the "Report Released" dummies with the included time-varying municipality variables (tax collections, homicide rate and a dummy indicating party alignment between local and national governments). It also controls for the interaction of the "Report Released" dummy with the "high exposure" dummy.

These results are consistent with local media being a crucial channel by which the treatment is disseminated and are aligned with Larreguy, Marshall and Snyder Jr (2014), who show the importance of local media in spreading the corruption news in Mexico. Moreover, the results give additional support to the claim of exogeneity, as they show that the main effect is significant only among those localities that were more likely to be affected given their higher potential exposure.

6.2 Test of informational update

If the corruption scandals were signals that people interpreted as new norms of honesty (at least, new for them), then the main effect should have been greater in municipalities in which the incumbent was thought to be honest. If the scandals do not reveal any new and surprising information, then citizens will not update their values and change their behavior because they have not learned anything new about social norms of their communities.

I test this hypothesis by showing that the effect of corruption on cheating was most pronounced in municipalities in which the party in power was not the one perceived as the ‘‘corrupt party’’ ex-ante. More specifically, I estimate equation 1, but I now add an interaction between corruption and a dummy (‘‘perceived corrupt’’) that takes a value of 1 if the party in power during time t in municipality m was perceived as corrupt (ex-ante), and Yu 0 otherwise. To classify each political party as "perceived corrupt," I use the combined datasets described in the Data section. In particular, I classify as ‘‘perceived corrupt’’ municipalities in which the proportion of people that perceives the incumbent party as corrupt in any given period exceeds 50% (on a normalized scale from 0 to 100).

In every specification, I include the interaction between the "Report Released" dummy and the "perceived corrupt" variable as a control. I also control for the interaction of the treatment variable (Corrupt) with several municipality controls (local tax collections, homicides per capita and the dummy indicating if the party of the corrupt mayor was politically aligned with the national party). The models also include interactions of those municipality controls with the "Report Released"

dummy.

Results are shown in Table VI (rows III and IV), including a different set of controls. The sign of the interaction term is, as expected, negative and significant at the 10% level. Moreover, the effect of corruption on cheating becomes notably larger and more significant for the municipalities in which the party in power was not initially perceived to be the most corrupt. The effect of corruption on cheating seems to be fully explained by the ex-ante "honest" municipalities. It becomes indistinguishable from zero among the municipalities in which the incumbent party is ex-ante perceived as dishonest (row ‘‘Corrupt+Perceived Corrupt’’ of Table VI).

These results suggest - in line with other papers in the literature, such as Arias et al. (2018) - that the exemplar effect of government malfeasance on cheating occurred especially when there was an informational update.

6.3 Other hypotheses

An alternative explanation is that cheating is driven by teachers (instead of students). A plausible story could be that mayors were politically connected with principals and teachers and attempted to inflate test scores around elections, especially if reports showed that they were corrupt (in line with evidence provided by Brollo, Kaufmann and La Ferrara (2017) and Akhtari, Moreira and Trucco (2017) in Brazil).

To rule out this potential mechanism, I present two pieces of evidence. In Table VII (rows I and II), I show the heterogeneous effect by type of school (private or public). In every specification, I include the interaction between the "Report Released" dummy and the "private school" variable as a control. I also control for the interaction of the treatment variable (Corrupt) with several municipality controls (local tax collections, homicides per capita and the dummy indicating if the party of the corrupt mayor was politically aligned with the national party in power). The models also include interactions of those municipality controls with the "Report Released" dummy.

If the "social norms" channel is the main explanation, I would expect to see a similar effect in private and public schools. On the other hand, if the main channel is

related to mayors being politically connected with public schools principals, I would expect to see a much bigger effect among those schools (as private schools are less likely to be affected by politics). As the results in Table VII show, the effect is not significantly different in private and public schools.

The second piece of evidence is directly related to elections. In Mexico, public schools are managed by the state governments (instead of municipal governments). If the incumbent party at the state level is the same as the mayor's party, the incumbent party at the municipal level could collude with the state government to put pressure on principals and teachers in the municipality's schools to inflate grades during election years. In order to test this, I restrict the sample to municipalities/years in which the state and municipal governments are from the same coalition (around half of the observations) and then estimate the heterogeneous effects by "local election years." If the effect is explained by politically connected principals/teachers and governments, I would expect to see larger effects during election years.

In every specification, I include the interaction between the "Report Released" dummy and the "election year" variable as a control. I also control for the interaction of the treatment variable (Corrupt) with several municipality controls (local tax collections, homicides per capita and the dummy indicating if the party of the corrupt mayor was politically aligned with the national party in power). The models also include interactions of those municipality controls with the "Report Released" dummy.

Table VII (rows III and IV) shows that the interaction terms are highly non-significant. The effect is not larger during election years. Combined, these two pieces of evidence suggest that the main effect was not driven by politically connected principals and mayors.

Another plausible hypothesis competing with the social norms story could be that corruption, when discovered, affected the perceived expected cost for a cheater: after observing that the mayor was corrupt, a student might have thought that, even if she were caught cheating, the punishment would not be very severe. Ideally, I would like to show that the effect does not vanish when a politician was punished, but, unfortunately, there is not enough variability to conduct such an analysis (judicial

punishment is highly unlikely and, in any case, the judiciary process would take too long).

That said, if the punishment story was valid, I would expect to see a larger effect of corruption on cheating in school-grades in which the likelihood of being caught was higher in the first place. In environments in which, for logistical reasons, catching a student while he or she cheats is difficult, a change in the expected punishment shouldn't have a large effect on students' behavior.

To formally test this, I run heterogeneous effects by the average size of the classrooms. Cheating in small classrooms is probably easier to catch, and, therefore, the risk of cheating is higher. For students in those classrooms, a change in the punishment for cheating should be more relevant than for those in larger classrooms.[24] Although this test is certainly imperfect (classroom size could be associated with other variables that are also relevant for cheating), the result is at least suggestive.

I ran the main regression adding an interaction with the log of students per classroom (normalized to the mean for the sake of interpretation). In every specification, I also include the interaction between the "Report Released" dummy and the "students per classroom" variable as a control. I also control for the interaction of the treatment variable (Corrupt) with several municipality controls (local tax collections, homicides per capita and the dummy indicating if the party of the corrupt mayor was politically aligned with the national party in power). The models also include interactions of those municipality controls with the "Report Released" dummy.

Table VII (rows V and VI) shows that the interaction is highly non-significant, which suggests that the classroom size does not diminish (or amplify) the main affect. Given that cheating is not formally punished at all, these results are not surprising.

[24]The number of students per school grade and year is available for every year. However, the number of classrooms is available only for 2013. I compute a variable called "number of students per classroom" as the total number of students that took the test in a given school, grade and year, divided by the number of classrooms of the same school and grade in 2013.

7 Conclusions

Do political leaders lead by example? Are our cultural attitudes influenced by them? In this paper, I investigate a way in which honest behavior and values are significantly affected through the power of example: corrupt politicians generate corrupt citizens.

I show that when government malfeasance becomes public, people react instantaneously, by behaving more dishonestly (as measured by the secondary school cheating rate on exams) and, what is even more worrisome, changing their civic values.

First, I show that the publicity about corruption in Mexico during the study period had an effect of around 10% (from 4% to 4.4% approximately) on the secondary school cheating rates. I claim that this effect happened as a consequence of a change in the perception of social norms in a social learning theory process. To support this hypothesis, I use a Mexican values survey (MxFLS) to show that when households were exposed to public corruption, they significantly changed their values about honesty: for example, they more often believed that to get ahead in life it is necessary to cheat.

Consistent with the idea that people act more dishonestly after having been exposed to new, debased standards of social norms, I show that the effect on cheating was significantly greater in municipalities in which the government in power belonged to a party that was thought to be honest.

Finally, I show that the effect was generally bigger when there was higher access to local media, and present evidence that suggests the implausibility of alternative channels. First, I show that the effect was not bigger during election years or in public schools (versus private schools), which suggests that the effect was not driven by politically connected mayors and principals. Second, I show that the effect is equally big whether the classroom size was large or small. This supports the idea that, even when the likelihood of being caught was small (in a very large classroom), the effect remained significant. This finding helps to rule out a story in which students update their expected cost of cheating downward after observing corruption.

A back-of-the-envelope calculation that extrapolates the results to the rest of the country shows that, potentially, the effect of corruption on values and anti-social behavior is sizable. What would happen if all the municipalities of the country were audited?

For example, let us assume that the proportion of corrupt municipalities country-wide is similar to the findings of the audits discussed in this paper (54% of corrupt municipalities, on average). And consider that the estimations in this paper show that the proportion of people with at least one survey answes revealing a lack of civic values increased by around 19 percentage points (from a base of 49%) due to being exposed to corruption. Then, one can be extrapolate that around seven million additional individuals (of a population of 120 million people) will now have at least one answers revealing a lack of civic values to statements such as ''To get ahead in life you need to cheat.'' On the same note and with the same assumptions, 17,000 new secondary students would start to cheat as a consequence of being exposed to corruption in a given year.

These results are relevant for Mexico in particular, but also for the region in general because corruption in Latin America is generally high. In the 2015 Corruption Perceptions Index published annually by Transparency International, Mexico ranks in the 123rd position (out of a sample of 167 countries). This problem also emerges as a great concern when Mexicans are asked about major problems in their country. According to the Global Competitiveness Report (World Economic Forum, 2015), corruption is perceived as the main problematic factor in doing business in the country. Corruption at the top level of government is not the only type of corruption that Mexico faces: according to the Mexican Competitiveness Institute (IMCO, 2016), Mexicans spend MX$ 32,000 MM each year ($ 1,600 MM) in small daily bribes, the result of 200 million small bribes of about $ 8 each, per year. Corruption and dishonesty are, thus, highly relevant and correlated problems.

The evidence in this paper shows that the negative effect of the culture of corruption within a country should be added to the well-known and damaging effects of corruption on development and that, together, they should be included in any cost-benefit analysis of policies aimed at fostering transparency. Corruption has a

multiplier effect: it generates more corruption by setting an example. Generating a cultural change without reducing corruption at the top level seems a very difficult task because people learn from their leaders.

8 Tables and Figures

Table I: Effect of Corruption on Cheating (Secondary Schools)

	Base	(I)	(II)	(III)	(IV)	(V)
Corrupt (>0)	0.41	0.43	0.47	0.39	0.39	0.38
		(0.17)	(0.17)	(0.18)	(0.18)	(0.17)
		[10.4%]	[14%]	[9.5%]	[9.5%]	[9.0%]
Released		-0.18	-0.18	-0.12	-0.12	-0.23
		(0.14)	(0.14)	(0.14)	(0.14)	(0.13)
		[4.3%]	[4.3%]	[2.9%]	[2.9%]	[5.6%]
Mun. Trend		NO	NO	NO	NO	YES
Grade FE		NO	NO	NO	YES	YES
Mun. Controls		NO	NO	YES	YES	YES
Pol. Controls		NO	YES	YES	YES	YES
Observations		340,009	340,009	340,009	340,009	340,009
R-Squared		0.20	0.21	0.21	0.22	0.23

Clustered Standard Errors in Parentheses (municipality).
Results with the full set of controls (last column) include school Fixed Effects, Grade Fixed Effects, Year Fixed Effects, municipality-specific linear trends and the set of controls at the municipality level, described in Section 3.
In brackets: the estimated coefficient divided by the mean of cheating.

Table II: Effect of Corruption on Cheating (Secondary Schools): Robustness

	(I)	(II)	(III)	(IV)	(V)	(VI)
Corrupt (>0)	0.43	0.39	0.37	0.38	0.37	0.46
	(0.17)	(0.18)	(0.17)	(0.17)	(0.17)	(0.24)
	[10.5%]	[11.5%]	[9%]	[9.3%]	[9%]	[10.7%]
Corrupt (P15)	0.47	0.43	0.43	0.42	0.42	0.62
	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.23)
	[11.5%]	[10.5%]	[10.5%]	[10.2%]	[10.2%]	[15.1%]
Corrupt (P25)	0.50	0.43	0.43	0.44	0.45	0.65
	(0.17)	(0.18)	(0.17)	(0.18)	(0.17)	(0.26)
	[12.2%]	[10.5%]	[10.5%]	[10.7%]	[11%]	[15.8%]
Corrupt (log)	0.23	0.18	0.18	0.15	0.15	0.23
	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)
Mun. Trend	NO	NO	NO	YES	YES	NO
Grade FE	NO	NO	YES	YES	YES	YES
Mun. Controls	NO	YES	YES	YES	YES	YES
Pol. Controls	NO	YES	YES	YES	YES	YES
School or Mun. Fixed Effects	School	School	School	School	Mun.	School
Sample	Full	Full	Full	Full	Full	Restricted
Observations	340,009	340,009	340,009	340,009	340,009	110,720
R-Squared	0.23	0.21	0.21	0.20	0.076	0.39

Clustered Standard Errors in Parentheses (municipality).
Results with the full set of controls include school Fixed Effects (column IV and VI) or municipality fixed effects (column V), Grade Fixed Effects, Year Fixed Effects, municipality-specific linear trends and the set of controls at the municipality level, described in Section 3. All columns except Column VI control for the "Report Released" dummy. In Column VI the sample is restricted to year-municipalities in which there was an audit.
In brackets: the estimated coefficient divided by the mean of cheating.

Table III: Effect of Corruption on Cheating (Primary Schools)

	Base	(I)	(II)	(III)	(IV)	(V)
Corrupt (>0)	0.52	0.13	0.07	-0.04	-0.04	0.013
		(0.09)	(0.09)	(0.11)	(0.11)	(0.11)
		[2.5%]	[1.3%]	[-0.7%]	[-0.7%]	[0.25%]
Released		0.01	0.07	0.08	0.07	-0.022
		(0.09)	(0.09)	(0.09)	(0.09)	(0.085)
		[0.19%]	[1.3%]	[1.5%]	[1.3%]	[-0.4%]
Mun. Trend		NO	NO	NO	NO	YES
Grade FE		NO	NO	NO	YES	YES
Mun. Controls		NO	NO	YES	YES	YES
Pol. Controls		NO	YES	YES	YES	YES
Observations		1,584,495	1,584,495	1,584,495	1,584,495	1,584,495
R-Squared		0.22	0.22	0.22	0.23	0.23

Clustered Standard Errors in Parentheses (municipality).
Results with the full set of controls (last column) include school Fixed Effects, Grade Fixed Effects, Year Fixed Effects, municipality-specific linear trends and the set of controls at the municipality level, described in Section 3. All models control for the "Report Released" dummy.
In brackets: the estimated coefficient divided by the mean of cheating.

Table IV: Effect of Corruption on Values

	Base	(I)	(II)	(III)	(IV)	(V)
Count Index	0.74	0.26	0.49	0.54	0.62	0.60
(Sum 5 uncivic values)		(0.095)	(0.19)	(0.16)	(0.13)	(0.14)
		[0.28σ]	[0.54σ]	[0.59σ]	[0.68σ]	[0.66σ]
At Least 1	0.49	0.12	0.18	0.18	0.19	0.19
Uncivic value		(0.055)	(0.09)	(0.088)	(0.072)	(0.070)
		[0.24σ]	[0.36σ]	[0.36σ]	[0.38σ]	[0.38σ]
At Least 2	0.18	0.11	0.21	0.25	0.26	0.26
Uncivic values		(0.037)	(0.07)	(0.054)	(0.046)	(0.052)
		[0.28σ]	[0.53σ]	[0.63σ]	[0.66σ]	[0.66σ]
1st component - PCA	0.16	0.084	0.14	0.14	0.16	0.16
with 4 uncivic values		(0.023)	(0.044)	(0.040)	(0.03)	(0.03)
		[0.38σ]	[0.63σ]	[0.63σ]	[0.72σ]	[0.72σ]
Individual Controls		NO	NO	NO	YES	YES
Year FE		NO	NO	NO	YES	YES
Mun. Controls		NO	NO	YES	YES	YES
Pol. Controls		NO	YES	YES	YES	YES
Observations		9,150	9,150	9,150	9,150	9,150
R-Squared		0.039	0.045	0.051	0.078	0.081

Clustered Standard Errors in Parentheses (municipality)
Results with the full set of controls (last column) include Year Fixed Effects and the set of controls at the municipality level, described in Section 3, plus the individual level controls described in Section 5.3.
Definitions: ''Count Index'': sum of five uncivic answers, ''At Least 1'': at least one uncivic answer, ''At Least 2'': at least two uncivic answers, ''PC'': First component of a PCA (normalized to a 0-1 scale). The exact wording of the individual questions is as follows: The exact wording of the five questions is as follows: (1) ''The one who does not cheat, does not get ahead'' (Completely Agree, Agree, Disagree, Completely Disagree), (2) ''Are you trustworthy?'' (Completely Agree, Agree, Disagree, Completely Disagree), (3) ''Laws were made to be broken'' (Completely Agree, Agree, Disagree, Completely Disagree), (4) ''How likely is it that you steal electricity from the public lines (illegally)''? (1 to 100), (5) ''How likely is it that you return a wallet with 500 pesos in it?'' (1 to 100).
In brackets: the estimated coefficients divided by the standard deviation of each variable.

Table V: Effect of Corruption on individual values

	Base	(I)	(II)	(III)	(IV)	(V)
Cheat to get ahead	0.21	0.14	0.19	0.20	0.24	0.23
		(0.04)	(0.087)	(0.08)	(0.06)	(0.072)
		[0.34σ]	[0.46σ]	[0.49σ]	[0.58σ]	[0.56σ]
Break Rules	0.21	0.18	0.16	0.17	0.21	0.22
		(0.047)	(0.062)	(0.055)	(0.047)	(0.048)
		[0.44σ]	[0.39σ]	[0.41σ]	[0.51σ]	[0.54σ]
Steal	0.06	0.041	0.13	0.12	0.11	0.10
		(0.038)	(0.047)	(0.041)	(0.04)	(0.04)
		[0.17σ]	[0.54σ]	[0.49σ]	[0.45σ]	[0.41σ]
Not trustworthy	0.045	0.034	0.033	0.034	0.041	0.036
		(0.077)	(0.026)	(0.026)	(0.023)	(0.24)
		[0.16σ]	[0.16σ]	[0.16σ]	[0.19σ]	[0.17 σ]
Not return wallet	0.22	-0.098	0.047	0.09	0.09	0.09
		(0.038)	(0.09)	(0.05)	(0.06)	(0.06)
		[-0.2σ]	[0.11σ]	[0.2σ]	[0.22σ]	[0.21σ]
Individual Controls		NO	NO	NO	YES	YES
Year FE		NO	NO	NO	YES	YES
Mun. Controls		NO	NO	YES	YES	YES
Pol. Controls		NO	YES	YES	YES	YES
Observations		4,489	4,489	4,489	4,489	4,489
R-Squared		0.039	0.045	0.051	0.078	0.081

Clustered Standard Errors in Parentheses (municipality)
Results with the full set of controls (last column) include Year Fixed Effects and the set of controls at the municipality level, described in Section 3, plus the individual level controls described in Section 5.3.
The exact wording of the individual questions and the criteria to build the indices can be found in the Appendix.
In brackets: the estimated coefficients divided by the standard deviation of each variable.

Table VI: Heterogeneous Effect of Corruption on Cheating: media and perception

	(I)	(II)	(III)	(IV)
	(a)	(b)	(a)	(b)
(I) Corrupt	0.12	0.24	0.77	0.83
	(0.26)	(0.25)	(0.32)	(0.30)
	[2.9%]	[5.8%]	[18.7%]	[19.8%]
(II) Corrupt x ''high exposure''	0.65	0.62		
	(0.30)	(0.27)		
	[15.1%]	[14.9%]		
(III) Corrupt x ''perceived corrupt''			-0.70	-0.67
			(0.37)	(0.35)
			[-17%]	[-16%]
Mun. Trend	NO	YES	NO	YES
Grade FE	NO	YES	NO	YES
Mun. Controls	NO	YES	NO	YES
Pol. Controls	NO	YES	NO	YES
(I) + (II)	0.59	0.86		
	(0.34)	(0.25)		
	[14.3%]	[21.0%]		
(I) + (III)			0.07	0.15
			(0.25)	(0.22)
			[1.7%]	[3.4%]
Obs.	340,009	340,009	321,201	321,201
R-Squared	0.26	0.27	0.27	0.27

Clustered Standard Errors in Parentheses (municipality)
Regressions in Models (b) include school Fixed Effects, Grade Fixed Effects, Year Fixed Effects, municipality-specific linear trends and the set of controls at the municipality level, described in Section 3. All models control for the "Report Released" dummy.
All models control for the interaction of the "corrupt" and the "Report Released" dummies with two time-varying municipality variables (tax collection and homicides rate). It also controls for the interaction of the "Report Released" dummy with the "high exposure" dummy.
In brackets: the estimated coefficient divided by the mean of cheating.

Table VII: Heterogeneous Effect of Corruption on Cheating: private schools, election years and class size

	(I)	(II)	(III)	(IV)	(V)	(VI)
	(a)	(b)	(a)	(b)	(a)	(b)
(I) Corrupt	0.32	0.42	0.38	0.43	0.37	0.47
	(0.24)	(0.23)	(0.22)	(0.23)	(0.25)	(0.22)
	[7.8%]	[10.2%]	[9.0%]	[10.5%]	[9%]	[11.5%]
(II) Corrupt x ''private school''	0.30	0.24				
	(0.20)	(0.19)				
	[7.3%]	[5.8%]				
(III) Corrupt x ''election year''			-0.23	-0.12		
			(0.48)	(0.47)		
			[-5.6%]	[2.9%]		
(IV) Corrupt x ''class size (log)''					0.15	0.05
					(0.15)	(0.15)
Mun. Trend	NO	YES	NO	YES	NO	YES
Grade FE	NO	YES	NO	YES	NO	YES
Mun. Controls	NO	YES	NO	YES	NO	YES
Pol. Controls	NO	YES	NO	YES	NO	YES
(I) + (II)	0.62	0.67				
	(0.24)	(0.24)				
	[15.1%]	[16.3%]				
(I) + (III)			0.14	0.30		
			(0.42)	(0.46)		
			[3.4%]	[7.3%]		
Obs.	340,009	340,009	181,678	181,678	323,863	323,863
R-Squared	0.27	0.27	0.27	0.27	0.27	0.27

Clustered Standard Errors in Parentheses (municipality)
Regressions in Models (b) include school Fixed Effects, Grade Fixed Effects, Year Fixed Effects, municipality-specific linear trends and the set of controls at the municipality level, described in Section 3. All models control for the "Report Released" dummy.
All models control for the interaction of the "corrupt" and the "Report Released" dummies with two time-varying municipality variables (tax collection and homicides rate). It also controls for the interaction of the "Report Released" dummy with the "high exposure" dummy.
In brackets: the estimated coefficient divided by the mean of cheating.

9 Appendix

9.1 Additional Tables and Figures

Table A1: Cheating Descriptive Statistics

Year	Grade	Obs.	Mean %	SD %	Min	P99	Max
2006	3	15,915	2.4	12.4	0	36	100
2007	3	17.113	2.8	7.1	0	44	100
2008	3	16.628	6.5	9	0	100	100
2009	1	18.143	1.7	7	0	33	100
	2	18.440	3.6	10.6	0	60	100
	3	18.095	6.1	14.2	0	78	100
2010	1	19.031	1.9	7.8	0	40	100
	2	18.893	4.9	13.4	0	76	100
	3	18.677	6.2	14.6	0	80	100
2011	1	19.656	3.3	11	0	63	100
	2	19.526	2.8	10.1	0	56	100
	3	19.218	3.4	11.1	0	65	100
2012	1	19.171	4	13.1	0	80	100
	2	19.012	6.2	16.4	0	93	100
	3	18.615	6.7	16.6	0	92	100
2013	1	20.436	1.9	8.1	0	43	100
	2	20.241	4.1	12.6	0	75	100
	3	19.954	4.1	12.3	0	72	100

Table A2: Audit Descriptive Statistics

Year	Number Audits	Mean Not Authorized	SD Not Authorized	Proportion of Corrupt	Min. Not Authorized	Max. Not Authorized
2006	32	13.05	16.67	0.68	0	56.8
2007	94	9.21	13.09	0.57	0	46
2008	100	6.94	11.14	0.63	0	64
2009	111	11.2	15.74	0.62	0	87.5
2010	142	9.13	13.57	0.64	0	65.4
2011	130	7.06	14.35	0.54	0	100
2012	161	3.92	8.84	0.39	0	53.5
2013	160	3.34	8.09	0.42	0	52
Mean	128.3	7.26	12.12	0.54	0	66.91

Table A3: Survey Descriptive Statistics (Mean and Standard Deviation)

	Count Index	At Least 1	At Least 2	PC	Cheat to get ahead	Not Trust-worthy	Break Rules	Steal	Not Return Wallet
Mean	0.74	0.49	0.19	0.17	0.21	0.045	0.20	0.06	0.22
SD	(0.90)	(0.49)	(0.39)	(0.22)	(0.40)	(0.21)	(0.40)	(0.24)	(0.41)
Min	0	0	0	0	0	0	0	0	0
Max	5	1	1	1	1	1	1	1	1
Obs.	9,150	9,150	9,150	9,150	9,415	9,492	9,406	9,432	9,443

Definitions: ''Count Index'': sum of uncivic answers, ''At Least 1'': at least one uncivic unswer, ''At Least 2'': at least two uncivic answers, ''PC'': First component of a PCA (normalized to a 0-1 scale). The exact wording of the individual questions and the criteria to build the indices can be found in the Appendix.

Figure A1: Kernel Estimation - Unauthorized Expenditure 2006-2013, in %

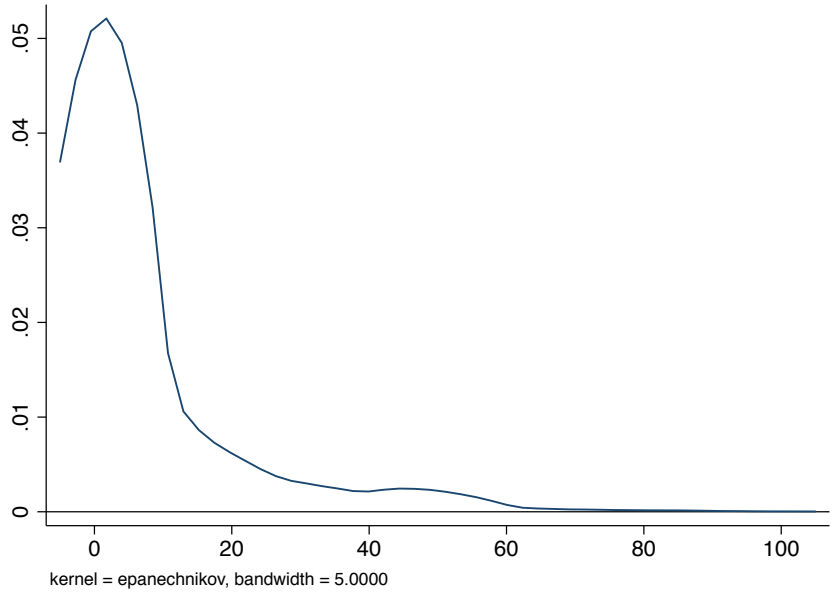


Figure A2: Kernel Estimation - Cheating Rate Secondary School All Grades 2006-2013

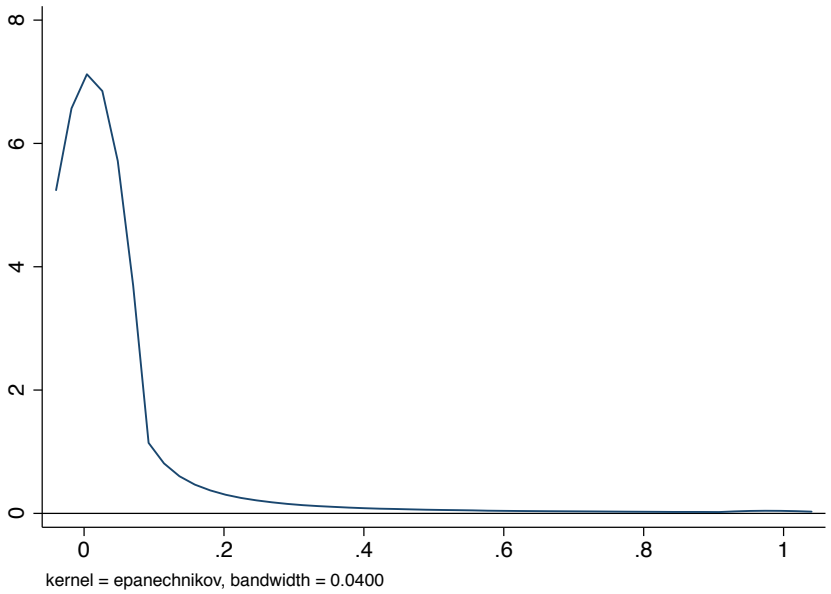
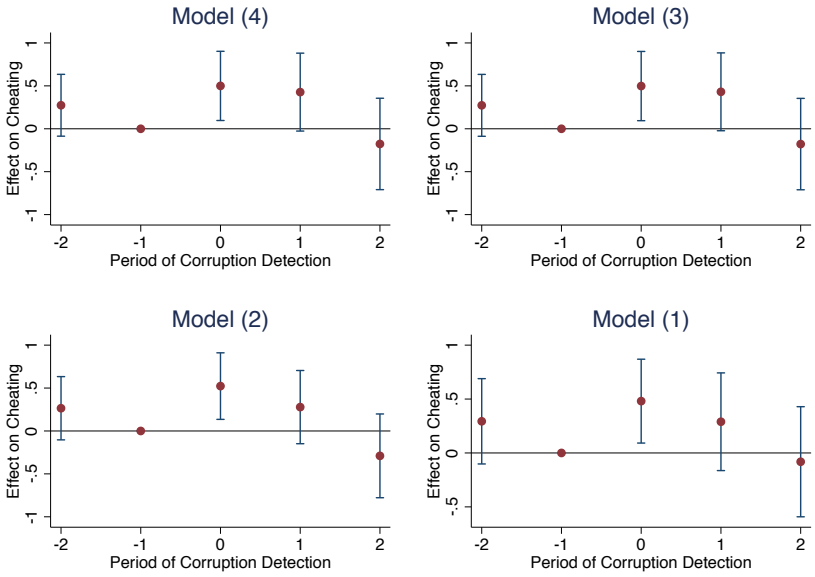
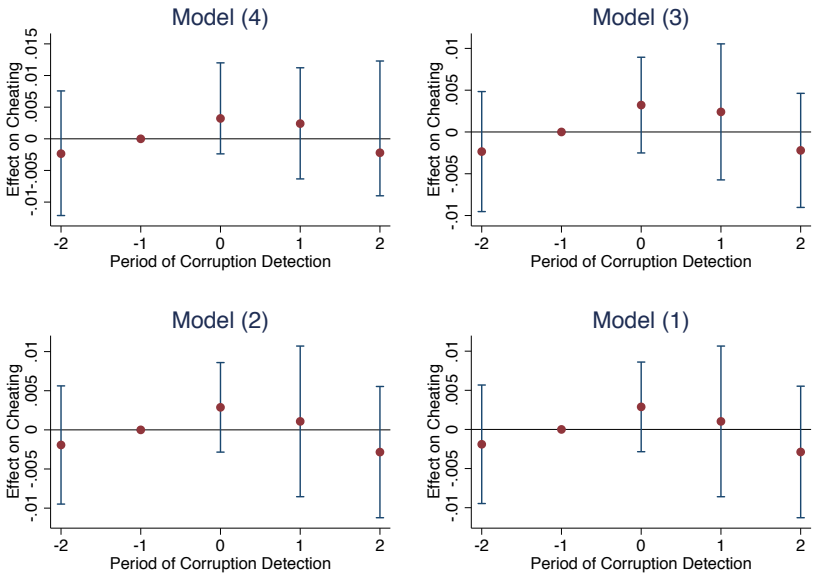


Figure A3: Leads and Lags (robustness) – 95% CI



Note: Model (1): excludes municipality linear trends, grade fixed effects, municipality time-varying controls and political controls. Model (2): same as Model (1) but adds political controls. Model (3): same as Model (2) but adds municipality time-varying controls. Model (4): same as Model (3) but adds grade fixed effects.

Figure A4: Leads and Lags, Only with Audit Reports – 95% CI



Note: 95% Confidence Intervals, 1st pre-treatment period normalized to 0. Corruption defined as "proportion of unauthorized expenditure greater than zero." Model (1) excludes grade fixed effects, municipality time-varying controls and political controls. Model (2): same as Model (1) but adds political controls. Model (3): same as Model (2) but adds municipality time-varying controls. Model (4): same as Model (3) but adds grade fixed effects.

Table A4: Public Opinion Descriptive Statistics

State	% Answering Corrupt			Corruption Ranking		
	PAN	PRI	PRD	1st	2nd	3rd
Aguascalientes	34	48	20	PRI	PAN	PRD
Baja California	13	100	4	PRI	PAN	PRD
Baja California Sur	0	66	28	PRI	PRD	PAN
Campeche	9	2	27	PRI	PRD	PAN
Coahuila	28	46	30	PRI	PRD	PAN
Chihuahua	11	59	21	PRI	PRD	PAN
Colima	5	85	27	PRI	PRD	PAN
Chiapas	2.5	88	14	PRI	PRD	PAN
Durango	11	58	23	PRI	PRD	PAN
Guanajuato	6	79	27	PRI	PRD	PAN
Guerrero	4	81	32	PRI	PRD	PAN
Hidalgo	11	57	32	PRI	PRD	PAN
Jalisco	20	77	21	PRI	PRD	PAN
Mexico (State)	25	72	30	PRI	PRD	PAN
Michoacan	11	55	36	PRI	PRD	PAN
Morelos	8	78	19	PRI	PRD	PAN
Nayarit	15	56	16	PRI	PRD	PAN
Nuevo Leon	9	70	23	PRI	PRD	PAN
Oaxaca	0	97	19	PRI	PRD	PAN
Puebla	19	85	9	PRI	PAN	PRD
Queretaro	2	80	39	PRI	PRD	PAN
Quintana Roo	5	66	29	PRI	PRD	PAN
San Luis Potosi	6	82	24	PRI	PRD	PAN
Sinaloa	13	70	10	PRI	PAN	PRD
Sonora	8	67	23	PRI	PRD	PAN
Tabasco	5	40	45	PRD	PRI	PAN
Tamaulipas	12	62	19	PRI	PRD	PAN
Tlaxcala	12	51	12	PRI	PRD	PAN
Veracruz	32	40	24	PRI	PAN	PRD
Yucatan	32	58	15	PRI	PAN	PAN
Zacatecas	2	34	56	PRI	PAN	PAN

Table A5: Effect of Corruption on Values: Robustness

	Count Index	At Least 1	At Least 2	PC
CorruptAfter (>0)	0.60	0.18	0.26	0.16
	(0.14)	(0.07)	(0.05)	(0.03)
	[0.65σ]	[0.36σ]	[0.66σ]	[0.71σ]
CorruptAfter (P15)	0.41	0.07	0.19	0.11
	(0.16)	(0.08)	(0.06)	(0.037)
	[0.44σ]	[0.14σ]	[0.48σ]	[0.49σ]
CorruptAfter (P25)	0.42	0.1	0.17	0.11
	(0.17)	(0.09)	(0.06)	(0.04)
	[0.45σ]	[0.20σ]	[0.43σ]	[0.49σ]
CorruptAfter (log)	0.06	0.017	0.027	0.017
	(0.02)	(0.01)	(0.007)	(0.0004)
Observations	9,150	9,150	9,150	9,150
R-Squared	0.094	0.082	0.07	0.054

Clustered Standard Errors in Parentheses (municipality)
Results with the full set of controls (last column) include Year Fixed Effects and the set of controls at the municipality level, described in Section 3, plus the individual level controls described in Section 5.3.
Definitions: ''Count Index'': sum of uncivic answers, ''At Least 1'': at least one uncivic answer, ''At Least 2'': at least two uncivic answers, ''PC'': First component of a PCA (normalized to a 0-1 scale). The exact wording of the individual questions and the criteria to build the indices can be found in the Appendix.
In brackets: the estimated coefficients divided by the standard deviation of each variable.

Table A6: Effect of Corruption on Values: Placebo

	Tanda	Saving (I)	Saving (II)	Fear (day)	Fear (night)	Enough Money
CorruptAfter >0	0.015	-0.065	805	0.07	0.042	-0.003
	(0.048)	(0.093)	(499)	(0.073)	(0.064)	(0.009)
	[0.03σ]	[0.13σ]	[0.25σ]	[0.18σ]	[0.10σ]	[0σ]
CorruptAfter (P15)	-0.043	-0.032	661	0.067	-0.047	-0.045
	(0.073)	(0.087)	(559)	(0.078)	(0.08)	(0.08)
	[-0.1σ]	[-0.06σ]	[0.2σ]	[0.17σ]	[-0.1σ]	[-0.09σ]
CorruptAfter (P25)	-0.05	-0.005	753	0.068	-0.05	-0.07
	(0.074)	(0.083)	(526)	(0.08)	(0.082)	(0.087)
	[-0.12σ]	[-0.01σ]	[-0.23σ]	[0.17σ]	[-0.12σ]	[-0.14σ]
CorruptAfter (log)	-0.003	-0.003	110	0.007	-0.03	-0.05
	(0.094)	(0.011)	(69)	(0.009)	(0.009)	(0.009)
Obs.	9,982	9,578	9,579	9,612	9,612	9,982
R2	0.09	0.09	0.09	0.09	0.09	0.09

Clustered Standard Errors in Parentheses (municipality)

Results with the full set of controls (last column) include Year Fixed Effects and the set of controls at the municipality level, described in Section 3, plus the individual level controls, described in Section 5.3.

Definitions: ‘‘Tanda’’: How likely is it that you will invest all your monthly income in an informal savings group? (0-100). Takes a 1 if the probability is greater than the mean average, ‘‘Saving (I)’’: Do you think about the future when you make decisions about spending and saving?. Takes a 1 if the answer is positive, ‘‘Saving (II)’’: Imagine that you have a rich relative who gives you 20,000 pesos today. How much would you spend in the next 30 days?, ‘‘Fear (day)’’: Do you feel scared of being attacked or assaulted during the day?. Takes a 1 if the answer is positive (scared or very scared), ‘‘Fear (night)’’: Do you feel scared of being attacked or assaulted during the night?. Takes a 1 if the answer is positive (scared or very scared),‘‘Enough Money’’: How likely is it that you will have 1 enough money this year to cover all your household needs?. Takes a 1 if the probability is larger than the mean average.‘‘Involved’’: No one should get involved in family’s or friends‘ problems. Takes a value of 1 if the individual agrees or completely agrees.

In brackets: the estimated coefficients divided by the standard deviation of each variable.

9.2 Values Survey: exact wording of the questions

In Section 6 (Interpretation and Channels), I use five questions related to civic values included in the Mexican Family Life Survey, which I combine to construct different indices. The exact wording of the five questions is as follows: (1) ''The one who does not cheat, does not get ahead'' (Completely Agree, Agree, Disagree, Completely Disagree), (2) ''Are you trustworthy?'' (Completely Agree, Agree, Disagree, Completely Disagree), (3) ''Laws were made to be broken'' (Completely Agree, Agree, Disagree, Completely Disagree), (4) ''How likely is it that you steal electricity from the public lines (illegally)''? (1 to 100), (5) ''How likely is it that you return a wallet with 500 pesos in it?'' (1 to 100).

I then construct four synthetic indices of civic-mindedness with these questions: (a) Count Index:sum of uncivic answers (min=1, max = 5) (b) At Least 1: takes a value of one if there is at least one uncivic answer and zero otherwise, (b) At Least 2: takes a value of one if there are at least two uncivic answers (c) Principal Component: First component of a Principal Component Analysis of the five questions (normalized to a 0-1 scale). The answers to questions (1) and (3) are considered uncivic if the individual agrees or completely agrees with the statements. The answer to question (2) is considered uncivic if the individual disagrees or completely disagrees with the statement. The answer to question (4) is considered uncivic if the probability is greater than the mean average. The answer to question (5) is considered uncivic if the probability is smaller than the mean average.

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