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The power of example: corruption spurs corruption

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Summary
Does political corruption erode civic values and foster dishonest behaviour? I test this hypothesis in the context of Mexico, by combining data on local government corruption and cheating in school tests. I find that, following revelations of corruption by local officials, cheating in cognitive tests by secondary school students increases significantly. The effect is large and robust, it persists for over one year after malfeasance is revealed, and is more pronounced for older students, arguably more exposed to information and to political discussions within and outside the family. Furthermore, it is stronger in places where the incumbent party was thought to be honest, and corruption revelations have come as a surprise. These findings are validated by evidence from individual survey data which documents that individuals interviewed right after corruption is revealed report to be less honest, less trustworthy and more prone to think that cheating is necessary to succeed, than similar individuals interviewed just before.

Keywords: Corruption, Social Norms, Culture, Leadership, Civic Values

JEL Classification: D73, P16, Z1, A13, O12, H72, K42

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1 Introduction

Although there is a widespread consensus that civic values and behaviour are crucial for economic development, the origin of these attitudes is still unclear. On the one hand, values may have deep historical roots, for example in terms of honesty and cooperation (Guiso et al., 2016) or trust and respect for others (Tabellini, 2008). On the other hand, values can be affected by more transient factors. For example, trust and cooperation (Barr and Serra, 2010; Di Tella et al., 2007) or, more broadly, social capital (Guriev and Melnikov, 2016) have proven to be influenced by individuals experiences.

One transient factor mentioned in the theoretical literature (Acemoglu and Jackson, 2014; Tabellini, 2008) but unstudied empirically is the example of political leaders, and its effect on citizens' civic attitudes. Although 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) the causality underneath still remains unclear.

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

The framework is especially suitable to understanding the effect of the leaders' negative example on citizens' behaviour for two reasons: first, the independent audit reports were published two years after actual corruption occurred. This allows me to differentiate the effect of corruption itself vis-à-vis the disclosure of corruption (that is, when the leader sets the negative example). Second, schools did not punish cheating. This allows me to rule out any interpretation related to a change in the perceived expected cost of breaking the rules and let me focus on a cultural channel.

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 standardised exams detected by software.[2] I then exploit the time-space variation in the revelation of corruption audits and estimate a difference-in-differences model with school, grade and year fixed effects. I also 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.

To support the internal validity of the estimations I 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. This suggests that pre-treatment trends were parallel, which is the main identification assumption of the model. To further support the claim of exogeneity I provide evidence that the timing of the publication of corruption reports is not driven by time-varying characteristics of the municipality. In particular, I show that, conditional on municipality time-invariant controls, cor-

[1] Other papers have used these and other audits as objective measures of corruption. For example, Avis et al. (2016); Ferraz et al. (2012); Ferraz and Finan (2011); Ferraz and Finan (2008) in Brazil and Chong et al. (2014) and Larreguy et al. (2014) in Mexico.

[2] 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).

ruption is unrelated to homicides and employment rates in the municipality and it is also independent of the political alignment of the mayor and the president.

I find that, following the revelations of corruption by local officials two years after they occurred, secondary school students are 10 per cent more likely to cheat in standardised tests. The effect is more pronounced for older students, who are arguably more exposed to political discussions within and outside the family,[3] and is robust to different sets of controls (for example, municipality instead of school fixed effects) and definitions of corruption. Using the event-study model I also show that the effect persists for one additional period after exposure to corruption.[4]

One possible mechanism to explain the main effect is a process of social learning in which people observe their leaders' behaviour, learn from their example on social norms and change their own intrinsic values as a result.[5] I provide evidence consistent with this hypothesis. First, I show that the impact of corruption on cheating is significantly larger in municipalities where the incumbent party was originally thought to be honest. This is consistent with the corruption scandal providing citizens with new information on social norms in their communities.

Second, I directly estimate the effect of a revelation of corruption 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 difference-in-differences model using the month of the release of the reports as the threshold dividing "before" and "after" each year. I also control for municipality fixed effects, time-varying municipality variables and a set of individual-level characteristics. I thus 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 the 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. On average, the number of self-reported uncivic values is 30 per cent greater for those affected by corruption.

To give additional support to the suggested mechanism I show that the effect of corruption on values has a significantly larger effect among young adults and old adults, which is consistent with similar findings in the literature of economics (Giuliano and Spilimbergo, 2013),[6] and social psychology. Recent literature in this regard has shown personality stability in middle ages and plasticity among the younger and older ages, consistent with the findings of this paper.[7]

This paper is related to three different strands of the literature. First, it contributes to the literature on

[3]There is no effect among primary school students, which I interpret as a placebo, given that primary school children were arguably not old enough to internalise and interpret government corruption and were less exposed to political events. This is conceptually similar, although at different threshold ages, to what Madestam et al. (2011) find in terms of the effect of attending a 4th July parade on political preferences. Their largest effect is concentrated among students between 9 and 13 years old.

[4]Each year students pass to the next grade and therefore the older cohort exits the sample and is replaced by a younger cohort, which is less affected by the original exposure to corruption. For this reason, a phasing out of the effect is expected.

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

[6]Giuliano and Spilimbergo (2013) focus on what they call the "formative years" (ages between 18 and 25) and show that growing up in a recession has a significant posterior effect on future beliefs about the market.

[7]Ardelt (2000), for example documents an inverted U-shape in personality stability with a peak around 50 years old, similar to Lucas and Donnellan (2011).

the determinants of civic attitudes by showing how a transient factor (the leaders' negative example) shapes citizens' values and honest behaviour. 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-Chauvín and Durante (2017) 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) show that having experienced socialism increases the preference for redistribution, Di Tella et al. (2007) show that giving land titles to squatters had an immediate effect on their beliefs about free markets and Giuliano and Spilimbergo (2013) provide evidence showing that growing up in 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 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 the social learning theory (Bandura and Walters, 1977; Akers et al., 1979 and Akers, 2011) according to which people engage in dishonest behaviour in imitation of others. It also relates to the literature on the economics of organisations, particularly to the models of leading by the example developed by Hermalin (1998).

Lastly, my 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 growth (Mauro, 1995), the allocation of government expenditure (Mauro, 1998; Svensson, 2005), the provision of public goods (Del Monte and Papagni, 2001), education (Ferraz et al., 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 and the conceptual setting. Section 3 presents the main specification. Section 4 contains the main results, robustness checks and the pre- and post-treatment analysis. Section 5 presents the tests that support the internal validity of the estimations. Section 6 provides interpretations and potential channels. Concluding remarks follow in section 7.

2 Theoretical background and data

2.1 Background

Besides the important role played by the institutional framework (that is, the expected cost of behaving unlawfully), our behaviour is also affected by our intrinsic motivations, which usually originate from the internalisation of social norms: individuals possess values related to honesty, trustworthiness and the importance of abiding by the rules, and so on. A deviation from our set of intrinsic motivations is costly so we generally prefer to act in accordance with them, regardless of how well the rules are formally enforced. As Fisman and Miguel (2007); Barr and Serra (2010) and Gächter and Schulz (2016) among others have shown, the "culture of corruption" (that is, different set of values or intrinsic motivation) exists, it varies across countries and determines people's behaviour in different institutional contexts.

Only 33 per cent of Mexicans, for instance, considered in 2012 that claiming government benefits without being entitled to them is never justifiable, compared with 59 per cent of Japanese (World Values Survey, wave 7). These two societies seem to have internalised different social norms in terms of honesty. Moreover, the chart for Mexico was 52 per cent in 1981 (61 per cent in Japan, World Values Survey, wave 1) which also suggests that these values might change even in relatively short periods of time.

What is still not totally clear is what explains the correlation between this culture of corruption and government malfeasance: do corrupt citizens choose corrupt politicians or do corrupt politicians set the norm for citizens to become dishonest? There are many ways in which politicians can induce dishonesty among their citizens. One hypothesis could be that corruption, when discovered, affects the perceived expected cost for a cheater: after observing that the mayor is corrupt a student might think that, even if she were to be caught cheating, the punishment would not be very severe. This hypothesis seems unlikely in this context because cheating is not formally punished at all.[8]

Another hypothesis could be that, even if the perception of expected punishment does not change, people's intrinsic values change and therefore cheating becomes more acceptable. This could be because citizens now think that corruption is not a negative value or even because they now realise that to get ahead in life it is necessary to be dishonest. The theoretical background of this is based on models of social learning (Bisin and Verdier, 1998; Bisin and Verdier, 2010; Acemoglu and Jackson, 2014; Bandura and Walters, 1977; Akers, 2011) in which people with malleable values learn about social norms in their community by observing peers and/or leaders. If they acquire new information –that is, if corruption is surprising –, they adapt their own intrinsic values as a result. For instance they start to consider that cheating is necessary to get ahead in life and consequently change their honest behaviour. Once adults have internalised the new norms children can learn about them in many ways, from their parents –, consistent with the vertical transmission theories as in Bisin and Verdier (2001); Bisin and Verdier (2010) and Corneo and Jeanne (2010)), but they could also learn directly from their social interactions with others (Harris, 1995).

One point worthy of emphasis is that affecting the values of children is not necessarily easy. On the one hand, the values and personality traits are especially malleable in younger people but, on the other hand, for children to be affected by an event such as corruption they need to have reached a certain age to be informed (and care) about the political situation. Also they need to have arrived at a

[8] This is made explicit in the application booklet of the test given to teachers and is publicly available.

certain level of cognitive development in order to understand corruption and reflect it into their own values and behaviour. Madestam et al. (2011), for example, show that attending a 4th July parade has a significant effect on political preferences especially for children between the ages of 9 and 13, a smaller effect among younger children and no effect among toddlers, precisely because their cognitive skills are not developed enough to process the concept of the event they are exposed to. In the setting of this paper, the necessary conditions for an effective processing of the events look more demanding.[9] It is thus expected the main effect of the negative example to be greater among pre-adults than among younger children.

To examine the social learning hypothesis (and the subsequent change in behaviour) I analyse the case of Mexico, where corruption of mayors (the leaders of the municipalities) has been objectively measured by independent audits and publicly announced at different times, over many years. In particular, I test the following observational outcomes that would be consistent with the theoretical process described above:

Main effect: students in municipalities exposed to the negative role model should behave more dishonestly, but this is expected to occur among pre-adult children, with less or no behavioural change among younger children.

Channel (change of intrinsic motivations): first, exposure to the negative role model should have a larger effect in those municipalities in which corruption was unexpected, and therefore where there was an update in terms of information. In other words: the process should be less effective if people already knew their leaders were corrupt. Second, adults exposed to the negative role model should change some of their values related to honesty (that is, their intrinsic motivations, for example, the importance of abiding by the law, being trustworthy and behaving lawfully). This effect should be especially noticeable among younger adults, with more malleable values, according to the literature in psychology and economics.

2.2 Cheating data

The main outcome to be tested is the proportion of students that cheated in a standardised exam. The exam, called Prueba Enlace Básica, is a compulsory national standardised test implemented each year by the federal government (Maths and Spanish plus another subject) that was applied between 2006 and 2013.[10] Initially, from 2006 to 2008, the test was only applied to primary students between third and sixth grade (8-11 years old) and third-year secondary students (14-15 years old). In 2009, students in the first and second years of secondary school were also included in the test, which was typically taken between mid-April and mid-July and covered both public and private schools. The test was created and coordinated by the Federal Ministry of Public Education and organised 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, there were many people involved during the test: an external coordinator (representing the Federal Ministry of Public Education), the schoolteachers and other external viewers, invited by the schools. Ultimate

[9] Psychological literature on children's behaviour 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 only true for those old enough to internalise the treatment.

[10] Although the test is compulsory, the effective coverage varied slightly through years due to administrative problems in the implementation. Therefore there are periods with more and fewer observations. 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.

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 where they usually taught. Lastly, to identify students who still somehow managed to cheat, the results were analysed by a software programme designed to detect student-to-student cheating. The software uses two complementary algorithms: a K-Index and a Scrutiny Method, both of which are designed to detect too similar patterns of incorrect answers among 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.[11]

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 1.

2.3 Corruption data

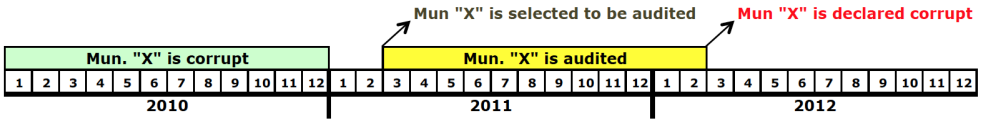
The explanatory variable is government corruption. Instead of using perception variables I focus on directly observed (and published) corruption, measured by a federal independent agency. In Mexico a large proportion of public funds are spent at the local level, and therefore municipalities (there are 2,446 in the country) represent a potentially important source of corruption. The audits, performed by the Auditoría Superior de la Federación (ASF), an independent agency which is formally part of the Congress, clearly reveal whether any deviation of the funds has occurred. For administrative reasons, the results are published with a lag of around two years after actual corruption occurred, which is crucial for the identification strategy of the paper. Each year the ASF defines and announces which municipalities are going to be audited, the process itself takes a whole year and therefore the results are not published until February the following year, as Chart 1 illustrates with a hypothetical example of a corrupt municipality.[12]

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 not only important because of the amount of money that it represents (more than 25 per cent of the local budget on average) but because it is earmarked to improve infrastructure projects targeting the poor and therefore events of malfeasance related to them tend to reach the media very

[11] The K-Index method has been widely used by testing companies. In particular, it is the method used to detect cheating in tests like GRE, SAT and TOEFL. The original algorithm was popularised 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 which 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 emphasise that the software identifies cheating between two students within a classroom but it is not designed to capture the usual methods of cheating by teachers such as altering the answers of students 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 similar patterns 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 counter-factual 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).

[12] In 2016 the anti-corruption laws were reformed and, among other modifications, the ASF was allowed to deliver partial results of individual audits throughout the year in which the audit was being conducted. This does not affect the sample of this paper.

Chart 1: Hypothetical audit timeline

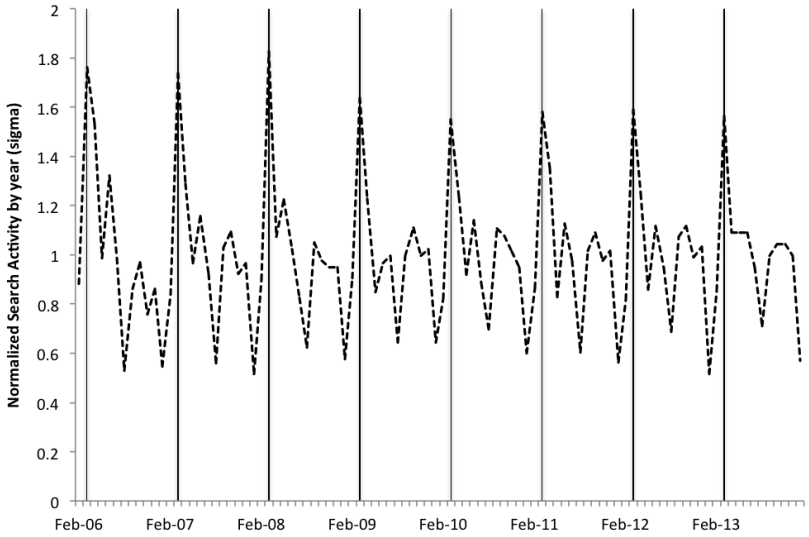


Source: Author's elaboration based on AFS

Note: The chart 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.

quickly. Following Larreguy et al. (2014) 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 "unauthorised used" of the FISM, which is the variable I use to measure corruption in a municipality. Importantly, the audit reports were released each year approximately three months before school tests were taken. The release of municipal audit report results each February is a very popular event at the local level. Chart 2 shows the Google searches related to audit reports by month in the period 2006-13, normalised 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 unauthorised spending.[13]

Chart 2: Google searches of "auditoria" in Mexico



Source: Author's elaboration based on Google

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

As presented in Table 8, in the sample period there were 898 audits, an average of 128 per year. More than 54 per cent of the audits revealed some degree of corruption and, on average, 12 per cent of the funds were labelled as unauthorised spending. Up to 2013, more than a quarter of the municipalities were audited at least once.

[13] 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, for instance: "Abarca embezzles 66 million pesos in 2013" (http://www.milenio.com/politica/Jose_Luis_Abarca_GuerreroASF_Abarca_desvio-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).

2.4 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).[14] Currently, the MxFLS contains information for an 11-year period (with some gaps), collected in three waves: 2002, 2005-07 and 2009-13. I focus on the questions related to values concerning honesty, rule abidance and self-declared trustworthiness on five items that are relevant for the analysis.[15] I then build four different aggregated indices of civic values, which are summarised in Table 3.

2.5 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 affiliation for the period of analysis. This data comes from the National Institute for Federalism and Municipal Development (INAFED, in Spanish), an official federal but decentralised organisation 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 government 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 and independent firm assessing public opinion. One question in the survey asks: "If the political parties in state X were people, which party would you say is the most corrupt?". People thus chose the adjectives that described most accurately each of the three main parties in every state. I use the percentages assigned to "Most Corrupt" to classify parties according to each citizen's perception. 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 is corrupt. The survey is not performed on a regular basis and the last version corresponds to the first year of the sample of this paper. The results of the survey are normalised to a 0-100 scale and summarised in the Appendix (Table A1).

Although these three parties cover most of the sample (around 75 per cent), there are many municipalities that were governed by small (sometimes local) parties or by coalitions which in some cases are strongly influenced by one of 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.

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

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

3 Empirical model

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

$$PropCheat_{sgt} = \alpha Corrupt_{mt} + \phi_s + \rho_g + \gamma_t + \lambda X_{mt} + \epsilon_{sgt} \quad (1)$$

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.[16] A full set of controls at various levels are 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 (1st , 2nd , 3rd 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 corruption and the year when the report was released; a dummy indicating if the municipality was audited during each year, which allows me to rule out any potential problem related to selection on auditing; 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 and the formal rate of employment in each year-municipality. 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.

Lastly, I restrict the sample to keep only those municipalities that were audited at least once during the sample period to reduce any potential problem that could arise if the group of municipalities that were audited were systematically different from those that were never audited. For robustness purposes I present the estimations of equation (1) using different definitions of corruption (that is, different thresholds of the amount of unauthorised use of the FISM).

[16] The year t corresponds to the period in which the results of the audit were published, not the year corruption actually occurred.

4 Main results, placebo and persistence

The main results are shown in Table 4. Section (A) of Table 4 shows the results for secondary school students (between 12 and 15 years old), where four different columns are shown for robustness (>0, P5, P15 and P25). In the first one (the preferred specification), a municipality is considered corrupt if the proportion of unauthorised expenditure is greater than 0 and in the second (/third/fourth) columns a municipality is considered corrupt if the proportion of unauthorised expenditure is greater than the percentile 5 (/15/25) of unauthorised expenditures.

In every specification of section (A) I find positive and significant results at the 5 per cent level. The magnitude of the preferred specification (>0) is sizeable, cheating in corrupt municipalities increased approximately 9-10 per cent on average with respect to the baseline.[17]

It is interesting to see the difference between the effect on secondary school students versus the effect on primary school students, which I use as a placebo test (section (A) and section (B) of Table 4, respectively). As expected, primary school students were much less affected by corrupt leaders than secondary school students, and the effect for the former is indistinguishable from 0. The fact that older students (12-15 years old) changed their behaviour but young students (8-11) did not, suggests that the exposure to corruption was effective only among those that, given their stage of life and level of cognitive development, were more likely to be affected. This is aligned with similar results in the literature (for example Madestam et al., 2011) as explained in the theoretical background section.

To formally test if there is any persistence of the main effect I also estimate an event-study model in the fashion of Autor (2003). An interesting feature of this model is that it is useful to test, first, if there was any anticipation effect (leads, interpreted as a placebo) and second, if there was persistence of the main effect during the years after corruption occurred. I thus estimate a model similar to equation (1) but now including two leads and two lags:

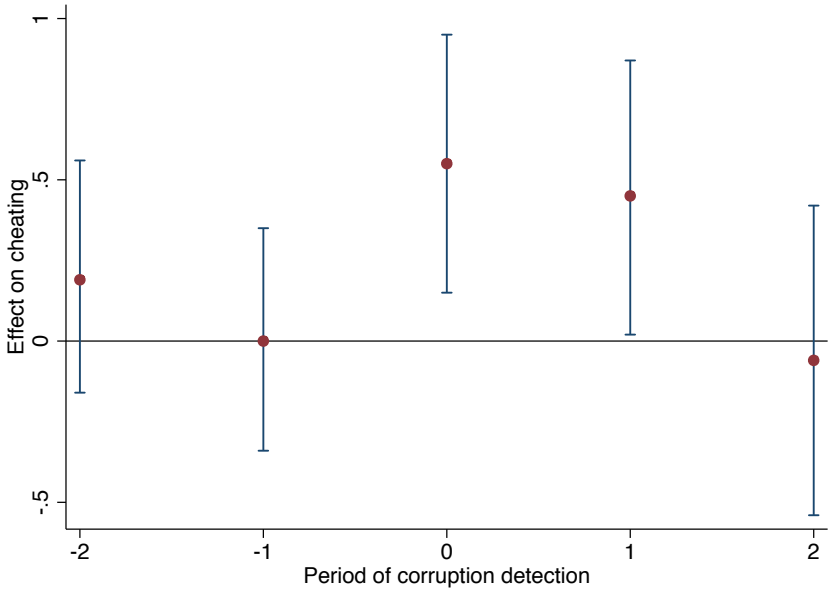
$$PropCheat_{sgt} = \sum_{l=-2}^{l=+2} \alpha_l Corrupt_{mt} + \alpha Corrupt_{mt} + \phi_s + \rho_g + \gamma_t + \lambda X_{mt} + \epsilon_{sgt} \qquad (2)$$

As Chart 3 shows (using the preferred specification: Corrupt >0 and showing 95 per cent confidence intervals) neither of the two leads is significantly different from zero at the 5 per cent level (or 10 per cent level). This is interpreted as a placebo as it shows that there are no anticipation effects. The chart also shows that the impact is persistent for at least one period after the exposure to corruption. The effect is significantly different from 0 with a 95 per cent confidence in the periods t=0 and t=1. 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 and therefore it is not possible to properly analyse the long-term persistence of the effect. However, the phasing out seen in the chart seems reasonable and consistent with a persistent effect. This is because a third of the students in the sample each year is replaced by a younger cohort, and is less affected by the exposure to corruption of the past as they were exposed at a younger age. For example, in the second year post-exposure a third of the sample are students that were affected by corruption when they were in the first grade of secondary school,

[17] In Table A2 of the Appendix I show the main results with different types of controls for robustness. In particular, I show that they are robust to the exclusion of trends, municipality time-varying controls and Grade FE. I also show that using municipality fixed effects instead of school fixed effects does not change results significantly. Also as a robustness check, I estimate the same model but restricting the sample only to municipalities that were revealed as corrupt at some point in the period. Results of these estimations, which are almost identical, are available upon request.

another third were in the last grade of primary school and the remaining third were in the penultimate grade of primary school.

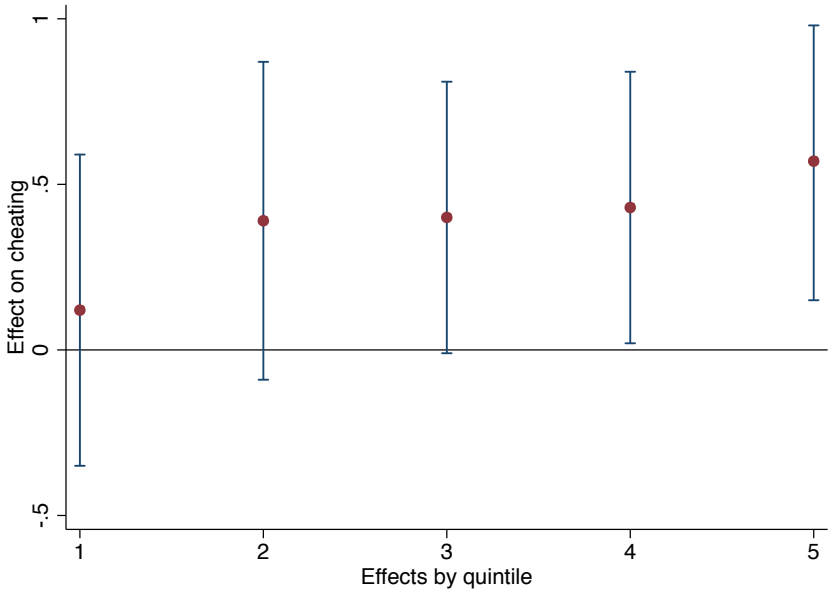
Chart 3: Leads and lags 95 per cent CI



Source: Author's calculations

An additional dimension of the analysis is how corruption has a differential effect depending on the magnitude of the 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 corruption. Second, it may be more difficult for a corruption scandal to become massively public if the proportion of misallocation is very low (that is, writing a corruption story about the diversion of 0.1 per cent of public funds).

Chart 4: Main effect by quintiles of corruption 95 per cent CI



Source: Author's calculations

In Chart 4 I show the result of estimating the main equation but now dividing the treatment into quintiles of corruption. As 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). This is consistent with corruption affecting people's behaviour only when the magnitude is sufficiently large.

5 Exogeneity tests

For the model to be internally valid it is not necessary to assume that corrupt municipalities are identical to non-corrupt municipalities: it is enough to have pre-treatment parallel trends of the outcome variable. In a setting with many years of treatment at different municipalities, the internal validity of a difference-in-differences may be tested, in the spirit of Granger (1969), by estimating a leads and lags model such as the one presented in the previous section (see Angrist and Pischke, 2008 and Autor, 2003)). The fact that there were no anticipation effects suggests that the main identification assumption is fulfilled (see also Autor, 2003).

Having said that, one concern would arise if, for example, the timing of the corruption scandal was related to other variables that also affected cheating. The fact that audit reports are published two years after corruption occurred helps to reduce these kinds of threats to the identification strategy. This is because, if there was a third variable causing an increase in cheating and corruption simultaneously, most likely this would have an effect the year corruption occurred and not two years later.

To formally prove this I show that the timing of corruption was random once time-invariant characteristics are accounted for. In particular, I provide evidence that corruption events are not related to other time-varying variables at the municipality level such as employment, crime or political issues.

First, I test the link between municipal employment and the publication of the corruption reports. I use a dataset containing a municipality-monthly measure of all formal employment in Mexico provided by the Mexican Social Security Institute, which contains monthly-municipality census data on employment and estimate the following model:

$$Corrupt_{mt} = \alpha EmploymentRate_{mt} + \eta_m + \gamma_t + \lambda X_{mt} + \epsilon_{mt} \tag{3}$$

where: α is the coefficient of interest, η_m is a municipality fixed effect and γ_t a period effect. $EmploymentRate_{mt}$ is the formal employment rate in municipality m during the period t. I also include a complete set of time-varying controls at the municipality level (X_{mt}), as described in section 3.

Second, I test the correlation between crime and corruption. I use a dataset containing a municipality-monthly measure of all homicides in Mexico elaborated by the Mexican National System of Public Health Information which contains monthly-municipality census data on homicides and estimate the following model:

$$Corrupt_{mt} = \alpha HomicidesRate_{mt} + \eta_m + \gamma_t + \lambda X_{mt} + \epsilon_{mt} \tag{4}$$

where $HomicidesRate_{mt}$ is the rate of homicides per 100,000 inhabitants in municipality m during the period t and the rest of the variables are the same as in equation 3.

Lastly, I explore the correlation between political alignment and corruption. I use the political data described in section 2 and test if a municipality is more likely to be corrupt when the mayor belongs to the same party as the federal government. More specifically, I estimate the following model:

$$Corrupt_{mt} = \alpha PoliticalAlignment_{mt} + \eta_m + \gamma_t + \lambda X_{mt} + \epsilon_{mt} \tag{5}$$

where $PoliticalAlignment_{mt}$ is a dummy variable that indicates if the mayor of the municipality m and the president belong to the same party during year t. The rest of the variables are the same as in equation 3.

The three models include all the same controls at the municipality level as the main equation 1. As Table 5 shows, once municipal time-invariant variables are accounted for, corruption is unrelated to the economic activity, the political alignment of the mayor and the local crime rate. These results are consistent with the identifying assumption that there are no third variables jeopardising the internal validity of the results.

6 Interpretation and channels

One plausible mechanism behind the main effect would be a process of social learning in which people observe the behaviour of their leaders, learn about social norms and change their own intrinsic values as a result. A first outcome that we would expect to observe for this channel to be credible is that the main effect is greater in municipalities where the incumbent was thought to be honest. If the scandals do not give any new and surprising information then citizens will not update their values and change their behaviour because they have not learned anything new about social norms of their communities. A second outcome consistent with this will be an erosion of self-declared civic values. After observing the leaders' corrupt behaviour people are likely to learn, for example, that to succeed in life it is necessary to act unlawfully. This effect is expected be greater among citizens in a stage of life in which values are more malleable (young adults, according to economics – Giuliano and Spilimbergo, 2013 – and psychology – Krosnick and Alwin, 1989).

6.1 Test of informational update

I first test this hypothesis by showing that the effect of corruption on cheating was most pronounced in municipalities where 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") which takes a 1 if the party in power during time t in the municipality m was perceived as corrupt (ex-ante) and 0 otherwise. To classify each political party as perceivedly corrupt I use the combined datasets described in the data section. In particular, I classify as "perceived corrupt" municipalities where the proportion of people that perceive the incumbent party as corrupt in any given period exceeds 50 per cent (in a normalised scale from 0 to 100).[18]

The results are shown in the columns labelled as "(2)" of Table 6. The sign of the interaction term is, as expected, negative and significant in the preferred specification, as well as in the (P15) definition of corruption. Moreover, the effect of corruption on cheating becomes notably larger (around 1.5x) and more significant for the municipalities where the party in power was not initially perceived to be the most corrupt in all the specifications. 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 where the incumbent party is ex-ante perceived as dishonest (row "Corrupt+Perceived Corrupt" of Table 6).

These results suggest that the exemplar effect of government malfeasance on cheating occurred especially when there was an informational update. Values seemed to be updated only if people have learned something new about their local government.

6.2 The effect of corruption on values

A second outcome that would be consistent with the proposed channels would be a change in the self-reported values related to civic-mindedness. 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

[18] As a result approximately 50 per cent of the municipalities in the sample are tagged as as perceivedly corrupt. A similar conclusion is obtained if the interaction is estimated with the original continuous variable instead of a dummy. Results are available upon request.

survey that refer to civic values (honesty, rule abidance, trustworthiness, cheating, and so on) and use them to construct four indices of uncivic values:[19] Index 1: at least one uncivic answer; Index 2: at least two uncivic answers; Index 3: first component of a Principal Component Analysis of the five questions (normalised to a 0-1 scale); and the Count Index: sum of uncivic answers (min=1, max = 5).[20]

An advantage for the identification strategy is that, for administrative reasons, each wave includes three years of interviews which were conducted during different months. This means that some households were surveyed just before the audit reports were released and some others just after.[21] I thus exploit the plausibly exogenous difference in the timing of the interviews relative to the timing of the release of the corruption and the fact that exposure to corruption varies in time and region to estimate a difference-in-differences model using the month of the release of the reports as the threshold dividing before and after 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 with similar age, gender, job status and educational level and living in the same municipality. More specifically I estimate the following model:

$$Values_{imtf} = \alpha CorruptAfter_{mtf} + \phi Corrupt_{mt} + \eta After_{f} + \gamma_t + \theta_m + \lambda X_{mt} + \phi Y_{imt} + \epsilon_{imt} \tag{6}$$

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 the period t and interviewed before or after the month in which the corruption 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 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 labour status dummies, ϕY_{imt}).[22]

The estimation of the main effects can be found in Table 7. In the table I present four different panels for robustness ("Corrupt (0)", "Corrupt (P5)", "Corrupt (P15)" and "Corrupt (P25)"). In each of them I use a different definition of corruption, as explained in the section of main results. Also, I present the results normalised by standard deviations to make the indices comparable. As is shown, all the point estimates of the main effect (columns "(1)") are positive and significant, most of them at the 1 per cent with a few significant at the 5 per cent level. The magnitude of the effects is generally sizeable: for example, for the Count Index it is equivalent to 0.28 standard deviations, which represents an increase of more than 30 per cent.[23]

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

[20] Table 3 shows the descriptive statistics for these indices and for the individual questions.

[21] The MxFLS is an academic project led by Mexican and American universities (Universidad Iberoamericana and CIDE in Mexico, UCLA and Duke University in the United States) 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 is released was unrelated to the characteristics of the households.

[22] 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. I also report the results with a window of four months in Table A3 in the Appendix.

[23] In Table A4 in the Appendix 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

These results are consistent with literature in economics (see for example Bisin and Verdier, 1998; Bisin and Verdier, 2010), psychology (see for example Mazar et al., 2008) and with the social learning type of theories (Bandura and Walters, 1977). This idea is also similar to Acemoglu and Jackson (2014) in which, when a leader is revealed as a good (or bad) example, then people learn the new social norms and act accordingly.

6.3 The inverted U-shaped curve of personality traits hypothesis

For present events to affect culture, values need to be malleable to some extent. Social psychology and economics have shown that this is true especially during certain ages in which there is mental plasticity: attitudes, beliefs and values are mostly plastic during a stage of life and more stable during other stages.

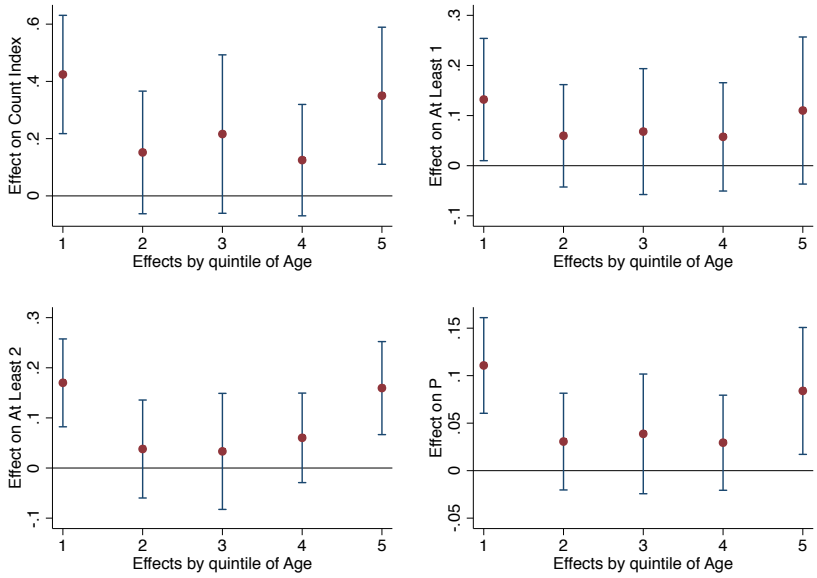
In this regard, it is widely believed that children, teenagers and young adults have more volatile traits (see for example Finn, 1986 and Viken et al., 1994) than adults.[24] However, the literature in psychology has not yet reached a consensus regarding the exact stages of life in which personality remains stable. Roberts and DelVecchio (2000) for example, find that rank-order stability increases linearly with age until age 50-55 and then reaches a plateau. On the other hand, Lucas and Donnellan (2011); Ardelt (2000); Specht et al. (2011) among others find consistent evidence with an inverted U-shaped curve of rank-order stability, with a peak around the age of 50 and a decrease afterwards.

I test this hypothesis by estimating the heterogeneous effect of corruption on self-reported values at different ages of life. I estimate the effect for five quintiles of age according to the distribution of my sample: younger than 30, between 30 and 39, between 40 and 47, between 48 and 57 and above 57. The results can be seen in Chart 5.

present the results of a placebo analysis in the Appendix. Table A5 shows the insignificant effect of corruption on a set of questions unrelated to civic values.

[24] In economics, this notion has been also consistent with the results in Giuliano and Spilimbergo (2013). The authors focus on the formative years (ages between 18 and 25) and show that growing up in a recession has a significant posterior effect on future beliefs about the market.

Chart 5: Effect on values by age



Source: Author's calculations
Note: Effect of corruption on values by age quintile. Quintile 1: age <30, quintile 2: age between 30 and 39, quintile 3: age between 40 and 47, quintile 4: age between 48 and 57, quintile 5: age >57

The first remarkable conclusion is that for each of the analysed indexes the effect is substantially big and significant among the youngest cohort – below 30 years old – and I find no significant effect among respondents in quintiles 2, 3 and 4. This is consistent with any of the psychological hypotheses stating the malleability of personality among the youth. Moreover, I find a strong and significant effect among the oldest cohorts of my sample (above 57 years old). This is consistent with the second group of psychological hypotheses stating that personality stability has an inverted U-shaped curve: personality becomes plastic again after a certain age for older adults.

These findings provide additional support to the suggested mechanism by showing that, as expected, the effect of corruption on values has a significantly larger effect during the stages in life in which personality is more prone to being changed by external events.

7 Conclusions

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

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

First I have shown that the publicity of corruption in Mexico has an effect of around 10 per cent in 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 type of process. To support this hypothesis, I used a Mexican values survey (MxFLS) to show that when households are exposed to public corruption they significantly change their values about honesty: for example, they think more often 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 have shown that the effect on cheating is 1.5 times greater in the municipalities in which the government in power belongs to a party that was thought to be honest. I also show that the effect is much stronger when the municipality is revealed as corrupt for the first time (1.8 times), which supports the idea that people react only when the information they receive is actually surprising.

Lastly, I ran a placebo test showing that the effect of corruption on cheating is only significant for secondary students and not for primary students, which suggests that the exposure to corruption was only effective among those that were more likely involved with the political discussion and thus were more likely affected by the events.

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 behaviour is sizeable. What would happen if all the municipalities of the country were audited?

For example, if we assume that the proportion of corrupt municipalities is similar country-wide to the findings of the current audits (54 per cent of corrupt municipalities on average), and considering that the estimations in this paper show that the proportion of people with at least two answers revealing a lack of civic values increased by around 8 percentage points (from a base of 50 per cent) as a consequence of being exposed to corruption, it can be extrapolated that around 5 million additional individuals (of a population of 120 million people) will now have at least two answers revealing a lack of civic values to statements like “To get ahead in life you need to cheat”. On the same note and with the same assumptions, 12,000 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 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 for doing business in the country. Corruption

at the top level of governance is not the only type of corruption that Mexico faces: according to the Mexican Competitiveness Institute (IMCO, 2016), Mexicans spend MX$ 32,000 billion each year (US$ 1,600 billion) in small daily bribes, the result of 200 million small bribes of about US$ 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 very difficult because people learn from their leaders.

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8 Tables

Table 1: 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

Note: the source of all tables in this section and in the appendix is author's calculations.

Table 2: Audit descriptive statistics

Year	Number audits	Mean not authorised	SD not authorised	Proportion of corrupt	Min. not authorised	Max. not authorised
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 3: Survey descriptive statistics (mean and standard deviation)

	Count Index	At Least 1	At Least 2	PC	Cheat to get ahead	Not trustworthy	Break rules	Steal	Not return wallet
Mean	0.85	0.54	0.22	0.19	0.235	0.067	0.22	0.14	0.28
SD	(0.96)	(0.49)	(0.42)	(0.23)	(0.42)	(0.25)	(0.42)	(0.34)	(0.44)
Min	0	0	0	0	0	0	0	0	0
Max	5	1	1	1	1	1	1	1	1
Obs.	13,062	13,062	13,062	13,062	13,263	13,454	13,244	14,379	14,379

Note: "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 (normalised 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.

Table 4: (A) Effect of corruption on cheating (secondary schools)

	Equation (1)				
	Base	>0	(P5)	(P10)	(P25)
Corrupt	4.1	0.39**	0.36**	0.44**	0.45**
		(0.17)	(0.17)	(0.17)	(0.17)
		[9.5%]	[8.7%]	[10.7%]	[10.9%]
Observations		336,730	336,730	336,730	336,730
R-squared		0.23	0.23	0.23	0.23

(B) Effect of corruption on cheating (primary schools)

	Equation (1)				
	Base	>0	(P5)	(P10)	(P25)
Corrupt	0.047	0.00007	0.00007	0.00008	0.00007
		(0.001)	(0.001)	(0.001)	(0.001)
		[0.2%]	[0.2%]	[0.2%]	[0.2%]
Observations		1,085,861	1,085,861	1,085,861	1,085,861
R-squared		0.23	0.23	0.23	0.23

Note: Clustered standard errors in parentheses (municipality)

*** p <0.01, ** p<0.05, *p<0.1

Regressions 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 are the estimated coefficient divided by the mean of cheating.

Table 5: (A) Employment and corruption

Equation (3)					
	Base	>0	(P5)	(P10)	(P25)
Employment rate	0.15	-0.002	-0.001	-0.001	-0.002
		(0.002)	(0.002)	(0.002)	(0.002)
Observations		4,259	4,259	4,259	4,259
R-squared		0.44	0.44	0.44	0.44

(B) Homicides and corruption

Equation (4)					
	Base	>0	(P5)	(P10)	(P25)
Homicides rate per 100,000	0.15	-0.003	-0.002	-0.001	-0.003
		(0.003)	(0.002)	(0.003)	(0.003)
Observations		4,259	4,259	4,259	4,259
R-squared		0.44	0.44	0.44	0.44

(C) Political alignment and corruption

Equation (5)					
	Base	>0	(P5)	(P10)	(P25)
Political party alignment	0.15	0.014	0.005	0.006	-0.003
		(0.018)	(0.018)	(0.018)	(0.018)
Observations		4,259	4,259	4,259	4,259
R-squared		0.6	0.6	0.6	0.6

Note: Note: Huber-White robust standard errors in parentheses.

** p <0.01, ** p<0.05, *p<0.1

Regressions include municipality fixed effects, year fixed effects, municipality-specific linear trends and the set of controls at the municipality level described in section 3.

Table 6: Heterogeneous effect of corruption on cheating: perceived corrupt

Equation 1								
	(>0)		(P5)		(P15)		(P25)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Corrupt	0.39**	0.67***	0.36**	0.55**	0.44**	0.69***	0.45**	0.64***
	(0.17)	(0.25)	(0.17)	(0.23)	(0.17)	(0.24)	(0.17)	(0.2)
	[9.5%]	[16.3%]	[8.7%]	[13.4%]	[10.7%]	[16.8%]	[10.9%]	[15.6%]
Interaction "perceived corrupt"		-0.61*		-0.42		-0.54*		-0.41
		(0.33)		(0.31)		(0.30)		(0.29)
		[-14.8%]		[-10%]		[-13.1%]		[-10%]
Corrupt + "perceived corrupt"		0.06		0.13		0.15		0.13
		(0.29)		(0.21)		(0.30)		(0.29)
		[1.4%]		[3.2%]		[3.2%]		[3.2%]
Obs.	336,730	336,730	336,730	336,730	336,730	336,730	336,730	336,730
R-squared	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27

Note: Clustered standard errors in parentheses (municipality)

*** p <0.01, ** p<0.05, *p<0.1

Regressions 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 are the estimated coefficient divided by the mean of cheating.

Table 7: Effect of corruption on values

Equation 6				
	Count Index	At Least 1	At Least 2	PC
CorruptAfter (>0)	0.27***	0.093***	0.098***	0.063***
	(0.07)	(0.03)	(0.033)	(0.02)
	[0.28σ]	[0.19σ]	[0.23σ]	[0.26σ]
CorruptAfter (P5)	0.27***	0.094***	0.98***	0.053***
	(0.08)	(0.03)	(0.033)	(0.033)
	[0.29σ]	[0.19σ]	[0.20σ]	[0.26σ]
CorruptAfter (P15)	0.26***	0.096**	0.95***	0.046***
	(0.071)	(0.03)	(0.033)	(0.016)
	[0.28σ]	[0.19σ]	[0.19σ]	[0.25σ]
CorruptAfter (P25)	0.26***	0.074**	0.09**	0.054***
	(0.07)	(0.033)	(0.035)	(0.017)
	[0.27σ]	[0.15σ]	[0.22σ]	[0.30σ]
Observations	11,779	11,779	11,779	11,779
R-squared	0.094	0.082	0.07	0.054

Note: Clustered standard errors in parentheses (municipality)

*** p <0.01, ** p<0.05, *p<0.1

Regressions include school fixed effects, grade fixed effects, year fixed effects, municipality-specific linear trends, the set of controls at the municipality level described in section 3 and the set of controls at the individual level described in section 6.

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 (normalised 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 are the estimated coefficients divided by the standard deviation of each variable.

9 Appendix

9.1 Additional tables

Table A1: 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 A2: Effect of corruption on cheating (secondary schools): robustness

	Equation 1									
	School FE					Municipality Fixed Effects				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Corrupt (>0)	0.38**	0.41**	0.42**	0.42**	0.36*	0.39**	0.39**	0.39**	0.39**	0.34*
	(0.17)	(0.17)	(0.18)	(0.12)	(0.12)	(0.17)	(0.17)	(0.17)	(0.11)	(0.11)
	[9.2%]	[10%]	[10.1%]	[10.1%]	[8.7%]	[9.5%]	[9.5%]	[9.5%]	[9.2%]	[8.2%]
Corrupt (P5)	0.36**	0.36**	0.35**	0.36**	0.31	0.34***	0.34**	0.34**	0.33*	0.31*
	(0.17)	(0.17)	(0.18)	(0.12)	(0.12)	(0.16)	(0.16)	(0.17)	(0.12)	(0.12)
	[8.8%]	[8.6%]	[8.5%]	[8/6%]	[7.5%]	[6.9%]	[8.2%]	[8.2%]	[8.1%]	[7.5]%
Corrupt (P15)	0.42**	0.45***	0.47***	0.49***	0.38*	0.43**	0.48***	0.48***	0.48***	0.38**
	(0.17)	(0.16)	(0.17)	(0.13)	(0.13)	(0.16)	(0.15)	(0.17)	(0.12)	(0.12)
	[10.2%]	[10.9%]	[11.4%]	[11.9%]	[9.2%]	[10.5%]	[11.7%]	[11.7%]	[8%]	[9.2%]
Corrupt (P25)	0.45**	0.47***	0.47***	0.49***	0.39*	0.47***	0.48***	0.48***	0.5***	0.41**
	(0.17)	(0.16)	(0.18)	(0.13)	(0.14)	(0.16)	(0.15)	(0.18)	(0.13)	(0.13)
	[10.9%]	[11.4%]	[11.7%]	[11.7%]	[9.4%]	[11.4%]	[11.2%]	[11.2%]	[12.1%]	[8.5]%
Mun. Trend	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO
Grade FE	YES	YES	NO	NO	NO	YES	YES	NO	NO	NO
Mun. Controls	YES	YES	YES	NO	NO	YES	YES	YES	NO	NO
Pol. Controls	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO
Observations	336,730	336,730	336,730	336,730	336,730	336,730	336,730	336,730	336,730	336,730
R-squared	0.23	0.22	0.21	0.21	0.20	0.092	0.087	0.083	0.083	0.076

Note: Clustered standard errors in parentheses (municipality)
*** p <0.01, ** p<0.05, *p<0.1
Models (1) to (5) include year fixed effects and school fixed effects. Models (6) to (10) include year fixed effects and municipality fixed effects. All the models include a dummy indicating if the municipality was audited in a given period.
In brackets are the estimated coefficient divided by the mean of cheating.

Table A3: Effect of corruption on values with a four-month window

Equation 6				
	Count Index	At Least 1	At Least 2	PC
CorruptAfter (>0)	0.246***	0.09*	0.11***	0.058***
	(0.09)	(0.049)	(0.035)	(0.01)
	[0.26σ]	[0.18σ]	[0.21σ]	[0.25σ]
CorruptAfter (P5)	0.25**	0.091*	0.011***	0.058***
	(0.091)	(0.049)	(0.035)	(0.02)
	[0.26σ]	[0.19σ]	[0.21σ]	[0.25σ]
CorruptAfter (P15)	0.245***	0.088*	0.10***	0.05**
	(0.092)	(0.049)	(0.035)	(0.02)
	[0.26σ]	[0.18σ]	[0.21σ]	[0.22σ]
CorruptAfter (P25)	0.25*	0.043	0.10**	0.045*
	(0.01)	(0.06)	(0.039)	(0.023)
	[0.26σ]	[0.07σ]	[0.2σ]	[0.22σ]
Observations	6,210	6,210	6,210	6,210
R-squared	0.06	0.06	0.06	0.06

Note: Clustered standard errors in parentheses (municipality)
*** p <0.01, ** p<0.05, *p<0.1
Regressions include school fixed effects, grade fixed effects, year fixed effects, municipality-specific linear trends, the set of controls at the municipality level described in section 3 and the set of controls at the individual level described in section 6.
In brackets are the estimated coefficients divided by the standard deviation of each variable.

Table A4: Effect of corruption on values

Equation 6									
	Count Index	At Least 1	At Least 2	PC	Cheat to get ahead	Not trust-worthy	Break rules	Steal	Not return wallet
CorruptAfter >0	0.27***	0.09***	0.10***	0.063***	0.09***	0.05***	0.019	0.07***	0.048
	(0.069)	(0.03)	(0.033)	(0.02)	(0.037)	(0.013)	(0.036)	(0.024)	(0.041)
	[0.28σ]	[0.19σ]	[0.23σ]	[0.26σ]	[0.21σ]	[0.21σ]	[0.05σ]	[0.2σ]	[0.11σ]
CorruptAfter (P5)	0.27***	0.09***	0.10***	0.053***	0.09***	0.053**	0.02*	0.067***	0.048
	(0.069)	(0.03)	(0.033)	(0.022)	(0.037)	(0.013)	(0.036)	(0.024)	(0.041)
	[0.29σ]	[0.19σ]	[0.23σ]	[0.23σ]	[0.21σ]	[0.21σ]	[0.05σ]	[0.2σ]	[0.11σ]
CorruptAfter (P15)	0.26***	0.09***	0.09***	0.046***	0.08***	0.05***	0.014	0.06**	0.047
	(0.071)	(0.03)	(0.017)	(0.023)	(0.037)	(0.013)	(0.035)	(0.024)	(0.041)
	[0.28σ]	[0.19σ]	[0.23σ]	[0.22σ]	[0.2σ]	[0.2σ]	[0.03σ]	[0.18σ]	[0.11σ]
CorruptAfter (P25)	0.26***	0.07**	0.09**	0.054***	0.067	0.042***	0.0072	0.064**	0.058
	(0.076)	(0.033)	(0.02)	(0.022)	(0.04)	(0.01)	(0.037)	(0.025)	(0.042)
	[0.27σ]	[0.15σ]	[0.21σ]	[0.23σ]	[0.16σ]	[0.17σ]	[0.02σ]	[0.19σ]	[0.13σ]
Obs.	11,779	11,779	11,779	11,779	11,779	11,779	11,779	11,779	11,779
R2	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09

Note: Clustered standard errors in parentheses (municipality)

*** p <0.01, ** p<0.05, *p<0.1

Regressions include school fixed effects, grade fixed effects, year fixed effects, municipality-specific linear trends, the set of controls at the municipality level described in section 3 and the set of controls at the individual level described in section 6.

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 (normalised to a 0-1 scale). The exact wording of the individual questions and the criteria to build the indices can be found on page 31.

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

Table A5: Effect of corruption on values: placebo

Equation 6							
	Tanda	Saving (I)	Saving (II)	Fear (day)	Fear (night)	Enough money	Involve
CorruptAfter >0	-0.01	-0.02	-258	-0.023	-0.034	0.012	0.058
	(0.048)	(0.065)	(370)	(0.041)	(0.037)	(0.035)	(0.056)
	[-0.02σ]	[-0.04σ]	[-0.06σ]	[-0.06σ]	[-0.08σ]	[0.02σ]	[0.12σ]
CorruptAfter (P5)	-0.02	-0.021	-259	-0.023	-0.034	0.013	0.059
	(0.048)	(0.064)	(371)	(0.04)	(0.038)	(0.035)	(0.056)
	[-0.05σ]	[-0.04σ]	[-0.06σ]	[-0.06σ]	[-0.08σ]	[0.03σ]	[0.12σ]
CorruptAfter (P15)	-0.013	-0.019	-304	-0.026	-0.033	0.009	0.058
	(0.049)	(0.063)	(377)	(0.041)	(0.037)	(0.035)	(0.055)
	[-0.03σ]	[-0.04σ]	[-0.07σ]	[-0.06σ]	[-0.08σ]	[0.02σ]	[0.12σ]
CorruptAfter (P25)	0.008	-0.003	-102	-0.043	-0.038	0.029	0.056
	(0.048)	(0.067)	(394)	(0.041)	(0.039)	(0.038)	(0.059)
	[0.02σ]	[-0.01σ]	[-0.03σ]	[-0.1σ]	[-0.09σ]	[0.06σ]	[0.12σ]
Obs.	11,684	11,684	11,684	11,684	11,684	11,684	11,684
R2	0.09	0.09	0.09	0.09	0.09	0.09	0.09

Note: Clustered standard errors in parentheses (municipality)
*** p <0.01, ** p<0.05, *p<0.1
Regressions include school fixed effects, grade fixed effects, year fixed effects, municipality-specific linear trends, the set of controls at the municipality level described in section 3 and the set of controls at the individual level described in section 6.
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 enough money this year to cover all your household needs?. Takes a 1 if the probability is larger than the mean average."Involve": No one should get involved in family or friends' problems. Takes a 1 if the individual agrees or completely agrees.
In brackets are 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 the following: (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: count of uncivic answers, (b) At Least One Positive: takes a one if there is at least one uncivic answer and zero otherwise, (c) At Least Two Positive: takes a one if there are at least two uncivic answers and zero otherwise, (d) At Least Three Positive: takes a one if there are at least three uncivic answers and zero otherwise. 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.