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CULTURES OF CORRUPTION: EVIDENCE FROM DIPLOMATIC PARKING TICKETS

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ABSTRACT

Corruption is believed to be a major factor impeding economic development, but the importance of legal enforcement versus cultural norms in controlling corruption is poorly understood. To disentangle these two factors, we exploit a natural experiment, the stationing of thousands of diplomats from around the world in New York City. Diplomatic immunity means there was essentially zero legal enforcement of diplomatic parking violations, allowing us to examine the role of cultural norms alone. This generates a revealed preference measure of government officials' corruption based on real-world behavior taking place in the same setting. We find strong persistence in corruption norms: diplomats from high corruption countries (based on existing survey-based indices) have significantly more parking violations, and these differences persist over time. In a second main result, officials from countries that survey evidence indicates have less favorable popular views of the United States commit significantly more parking violations, providing non-laboratory evidence on sentiment in economic decision-making. Taken together, factors other than legal enforcement appear to be important determinants of corruption.

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1. Introduction

The underlying causes of corruption remain poorly understood and widely debated. Yet the study of corruption beyond the realm of opinion surveys is still in its infancy, and there is little firm evidence relating corruption to real-world causal factors. Notably, social norms are often mentioned as a primary contributor to corruption in both the academic literature and the popular press, yet there is no evidence beyond the most casual of cross-country empirics.[1]

Research on the causes of corruption is compounded by the difficulties inherent in disentangling the effect of social norms versus legal enforcement: societies that collectively place less importance on rooting out corruption, and thus have weak anti-corruption social norms, may simultaneously have less legal enforcement. Understanding the relative importance of these potential causes of corruption is of central importance in reforming public institutions to improve governance: if corruption is predominantly controlled through anti-corruption social norms, interventions that focus exclusively on boosting legal enforcement will likely fail.

We develop an empirical approach for evaluating the role of social norms in corruption by studying parking violations among international diplomats living in New York City. Consular personnel and their families benefit from diplomatic immunity, a privilege which allowed them to avoid paying parking fines prior to November 2002. We examine differences in the behavior of government employees from different countries, all living and working in the same city, all of whom can act with impunity in (illegally) parking their cars. The act of parking illegally fits well with a standard definition of corruption, i.e., "the abuse of entrusted power for private gain,"[2] suggesting that the comparison of parking violations by diplomats from different societies serves as a plausible measure of the extent of corruption social norms or a corruption "culture".

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[1] See Lambsdorff (2005) for an overview of findings on culture and corruption based on cross-country comparisons. Witzel (2005) provides one of many discussions on the topic in the popular press. Mauro (2004) discusses several models of multiple equilibria in corruption levels that could be seen as capturing corruption culture. Tirole (1996) develops a model of bureaucratic collective reputation that also implies persistent corruption.

[2] This is the definition used by the international anti-corruption organization Transparency International (see http://ww1.transparency.org/about_ti/mission.html, accessed online March 9, 2006).

This setting has a number of advantages. Most importantly, our approach avoids the problem of differential legal enforcement levels across countries, and more generally strips out enforcement effects, since there was essentially no enforcement of parking violations for diplomats during the main study period. We thus interpret diplomats' behavior as reflecting their underlying propensity to break rules for private gain when enforcement is not a consideration. Additionally, because U.N. diplomats are largely co-located in Midtown Manhattan, we avoid many concerns of unobserved differences in parking availability across geographic settings.

The first contribution of this approach lies in allowing us to construct a "revealed preference" measure of corruption for government officials across 146 countries. This objective measure, based on real rule-breaking in parking, is arguably an improvement over existing country corruption indices that are typically based on subjective surveys, and it is certainly much cheaper data to collect.[3] Other existing corruption measures are also difficult to interpret – what does moving from a score of "1" to a score of "2" on a cross-country index really mean? – while our parking violations measure has a much more precise definition and explicitly cardinal interpretation.

In our main empirical result, we find that this parking violation corruption measure is strongly positively correlated with other country corruption measures, and that this relationship is robust to conditioning on region fixed effects, country income, and a wide range of other controls (including government employee salary measures). This finding arguably validates the usefulness of the new measure. It also goes against the predictions of standard economic models of crime in situations of zero legal enforcement (e.g., Becker 1968). These would predict that parking violations should be high across the board for all diplomats when enforcement is lifted. Instead we find that diplomats from low corruption countries (e.g., Norway) behave remarkably well even in situations where they can get away with violations, while those from high corruption countries (e.g., Nigeria) commit many violations, suggesting that they bring the social norms or corruption culture of their home country with them to New York City.

[3] In this sense, our corruption measure is conceptually similar to the *Economist* magazine's "Big Mac Index" as a measure of country purchasing power parity.

An alternative explanation for this pattern warrants mentioning upfront. It is possible there are stronger social sanctions – for example, public embarrassment through the media upon returning home – in low corruption countries against diplomats who commit many parking violations while in New York, relative to diplomats from high corruption countries. If the potential response of others in the home country, either informally or formally, is responsible for limiting parking violations, then diplomats' behaviors are better interpreted as an indication of their home country's cultural tolerance for corruption rather than their own personal values. However, this is still consistent with our basic interpretation of the level of New York City parking violations as a revealed preference measure of country corruption norms.

The parking violations data exist at the individual diplomat level for all U.N. mission diplomats present in New York City (numbering over 1700 at any given point in time), allowing us to study how individual behavior evolves over time in a situation of zero enforcement. For diplomats from high corruption countries of origin, a model of convergence to United States corruption norms would (presumably) predict a decline in the rate of parking violations over time, as tenure in the U.S. increases. By contrast, a model of convergence to the "zero enforcement" norm discussed above would imply an increase in violations over time, particularly for officials from low corruption countries. We do find evidence that the frequency of violations increases with tenure in New York City. However, in contrast to both models of norm convergence, there is a statistically significant positive interaction effect of home-country corruption levels and tenure in New York City, implying much greater increases in violations over time among diplomats from the high corruption countries.

The parking violation dataset also provides a novel window into the related issues of sentiment and affinity in individual decision-making. It is often claimed that sentiment has a major impact on important economic decisions as suggested, for example, by the frequent use of consumer boycotts to pressure corporate policies and the "capitalization of patriotism" in low yield war bonds. However, the

empirical evidence on this score remains contested.[4] We find that diplomats from countries where popular attitudes towards the United States tend to be unfavorable (based on comparable cross-country survey data) have significantly more parking violations than those from countries where attitudes towards the United States are largely positive. This setting is one in which diplomats can indulge their personal tastes for rule-breaking without punishment, and it appears that diplomats from countries where the U.S. is unpopular derive positive utility from breaking U.S. rules (or suffer less disutility than other diplomats from doing so).

A final empirical finding is worth highlighting. In the aftermath of the September 11, 2001 attacks, there was a sharp – though temporary – drop in diplomatic parking violations, by roughly 80%. We find that countries with greater proportions of Muslim population experience particularly sharp declines. We can only speculate about the exact causes of this change in behavior, but the fear of police harassment or negative media attention for their home country during that politically delicate period is a possibility. Also recall that there were hundreds of attacks on Muslims in the United States in the weeks following the 9/11 attacks (Council on American-Islamic Relations 2002).

The main theoretical implication of these empirical patterns, taken together, is that culture, norms, and emotions – in other words, factors other than legal enforcement – play a key role in government officials' corruption decisions. They suggest that understanding these factors should be taken seriously in debates about the causes of corruption and the policy measures to combat it.

The rest of the paper proceeds as follows: section 2 describes the diplomatic parking situation in New York City and the violations data, section 3 discusses the rest of the dataset, section 4 contains the empirical results and the final section concludes.

2. Diplomatic Parking Violations in New York City

[4] There is a small but growing literature on consumer sentiment and purchasing behavior. Chavis and Leslie (2006) examine the effect of the Iraq War on French wine sales and find mixed results. In the domain of corporate social responsibility, Hiscox and Smyth (2006) find that "good labor" labels have a strong impact on consumer demand.

Diplomatic immunity provides consular officials and their families with protection from prosecution or lawsuits in their host country. The original intent of these laws was to protect diplomats from mistreatment abroad, especially in countries not on friendly terms with the home country.[5] However, these days diplomatic immunity is more commonly viewed as the "best free parking pass in town" (BBC 1998). Diplomatic vehicles possess license plates tagged with the letter "D" that signals diplomatic status.[6] While these vehicles may be ticketed, the car's registrant is shielded from any punishment for non-payment of the ticket. Thus one immediate implication of diplomatic immunity – not just in New York, but also in most other capitals (e.g., London (BBC 1998), Paris (Agence Presse-France 2005), Seoul (Korea Times 1999)) – has been that it allows diplomats to park illegally but never suffer any threat of legal punishment, leaving a "paper trail" of illegal acts with no consequences.[7] To illustrate the magnitude of the problem, between November 1997 and the end of 2002 in New York City, diplomats accumulated over 150,000 unpaid parking tickets, resulting in outstanding fines of more than $18 million.

The parking violations data are at the level of the individual unpaid violation.[8] Drivers have 30 days to pay a ticket before it goes into default, at which point an additional penalty is levied (generally 110% of the initial fine). Diplomats then receive an additional 70 days to pay the ticket plus this penalty before it is recorded in our dataset as an unpaid violation in default. The information on each violation includes the license plate number, the name and country of origin of the car's registrant, the date, time and location of the violation, the fine and penalty levied, and amount paid (if any). The most common diplomatic parking violation was parking in a "No Standing – Loading Zone" (43% of violations). The remainder were spread across a wide range of violation types that imply varying degrees of social harm[9]: fines for expired meters accounted for 6% of the total, double-parking for 5%, and parking in front of a

[5] While the origins of diplomatic protection date back many centuries, the current incarnation is found in the Vienna Convention on Diplomatic Relations of 1961. See http://www.un.int/usa/host_dip.htm for the full text.
[6] Note that while the vehicle's diplomatic status is revealed by the license plate, there is nothing that identifies the country of origin of the vehicle's registrant.
[7] See *http://www.state.gov/m/ds/immunities/c9127.htm*.
[8] We gratefully acknowledge the New York City Department of Finance, in particular Sam Miller and Gerald Koszner, for compiling these data.
[9] Almost all parking violations in the dataset resulted in fines of US$55, making it impossible to assess the extent of social damage by violations' relative prices.

fire hydrant 7%, for instance. We present analyses for different types of violations below. Also note that in 20% of violations the registrant is the mission itself, signifying an official rather than personal vehicle. We return to this below in describing our individual-level results. The period of coverage is November 24, 1997 to November 21, 2005. (Refer to the Data Appendix for a more detailed description of the New York City parking violations dataset.)

A crucial change in legal enforcement took place in October 2002, with the implementation of the Clinton-Schumer Amendment (named after the two senators from New York State), proposed by the Bloomberg administration to deal with the diplomat parking problem. This law gave the City permission to tow diplomatic vehicles, revoke their official U.N. parking permits, and have 110% of the total amount due deducted from U.S. government aid to the offending diplomats' countries of origin (Singleton 2004). Parking violations fell substantially after this reform, suggesting that increased enforcement can sharply reduce corruption, but the basic cross-country patterns remain unchanged, as we discuss below.

We thus mainly focus on the pre-reform period, November 1997 through October 2002, since it is closest to the zero legal enforcement environment we are interested in. For most of the analysis we employ the total amount of unpaid parking violations for a particular country's diplomats conditional on the total number of U.N. permanent mission staff with diplomatic privileges. We obtain staff information from the U.N. Bluebook for May 1998. Published twice annually, the Bluebook lists all U.N. mission staff, as well as their official titles. We additionally use U.N. Bluebooks for 1996–2002 to track the U.N. tenure of individual level violators. Fortunately, the Bluebooks use consistent spellings across editions, facilitating automated matching across time. In a majority of cases, the spelling and format were also consistent with the names in the parking violations data; the algorithm automatically matched 71% of diplomats in the violations database (see the Data Appendix for further details). The first Bluebook we use is from February 1996, and we use this as our start date for calculating tenure at the United Nations. That is, we cannot distinguish among arrival times pre-1996, and all individuals included in the February 1996 Bluebook are coded as arriving in that month. As a robustness check, we also limit the sample only

to diplomats who were not yet present in New York in the 1996 Blue Book (reducing the sample by 16%), which allows us to more accurately capture arrival dates, as discussed below.

We also obtained data on the number of diplomatic license plates registered to each mission from the U.S. Department of State's Office of Foreign Missions, and we use this data as a control variable in some specifications. Unfortunately, these data are only available for 2006, though we were assured that these numbers are largely stable over time.[10]

Table 1 presents the annual number of violations per diplomat during November 1997 – October 2002 period by country, along with the total number of diplomats from the May 1998 U.N. Bluebook. Overall, the basic pattern accords reasonably well with common perceptions of corruption across countries. The worst parking violators – the ten worst are Kuwait, Egypt, Chad, Sudan, Bulgaria, Mozambique, Albania, Angola, Senegal, and Pakistan – all rank poorly in cross-country corruption rankings. While many of the countries with zero violations accord well with intuition (e.g., the Scandinavian countries, Canada), there are a number of surprises. Some of these are countries with very small missions (e.g., Burkina Faso and the Central African Republic), and a few others have high rates of parking violations but do pay the fines (these are Bahrain, Malaysia, Oman, and Turkey; we return to this issue below). The smallest missions may plausibly have fewer violations since each mission is given two legal parking spaces at the United Nations and this may suffice if the country has very few diplomats.

Figure 1 plots the total violations per month during November 1997 – November 2005. There are two clear declines in the number of violations – the first comes in September 2001, corresponding to the period following the World Trade Center attack. The second and more pronounced decline coincides with increased enforcement in New York City.

3. Cross-country data

We also employ country-level data on economic, political, and social characteristics, and in particular consider data on country corruption levels, using the corruption measure in Kaufmann et al (2005) from

[10] We thank Murray Smith of the U.S. Office of Foreign Services for these data and for many useful conversations.

1998, the earliest year with wide country coverage. This is a composite corruption index that is essentially the first principal component of a number of other commonly used corruption indices. By definition, therefore, it is quite highly correlated with the commonly used indices and is extremely highly correlated (ρ=0.97) with the Transparency International (TI) ratings from the same year. For ease of interpretation, we reverse the sign of the original measure so that higher values indicate greater corruption. The mean value of this measure is zero, and it ranges from -2.6 to +1.6 in our sample of countries. The main advantages of this country measure are that its method of aggregation is clearly defined relative to the TI measure, and it has broader country coverage than other indices.

The Pew Global Attitudes Survey[11] from 2002 (the earliest year that the survey was performed) provides a measure of anti-American sentiment based on responses to the question: "Please tell me if you have a very favorable, somewhat favorable, somewhat unfavorable or very unfavorable opinion of the United States." This is coded to take on values from one (most favorable) to four (least favorable) and then averaged across respondents. To control for general aversion to foreigners, we similarly code responses to another question from the Pew survey that asks respondents their attitudes towards a dominant regional country (for example, Argentines are asked to give their opinion of Brazil). The five countries in the Pew dataset whose citizens viewed the U.S. most favorably in 2002 are Honduras, Venezuela, Ghana, Philippines, and Nigeria, while the five that viewed the U.S. least favorably are Egypt, Pakistan, Jordan, Turkey, and Lebanon. The preponderance of Middle Eastern countries may in part be due to popular opposition there to the U.S. invasion of Iraq, which was imminent by late 2002. Unfortunately, the Pew data are not available prior to 2002 and thus we are unable to explore whether changes in popular attitudes over time affect New York City parking violations.

We include a number of other variables that may affect incentives to comply with local laws. From the data of Kuziemko and Werker (2006), we generate an indicator variable denoting whether the country received foreign aid from the United States in 1998. We similarly generate a pair of indicator variables for military and economic aid, respectively, since these two types of aid may reflect different

[11] These data are publicly available online at http://pewglobal.org/ (accessed March 9, 2006).

geopolitical interests: while economic aid recipients may feel beholden to the United States, those receiving military aid are typically countries that the United States requires as strategic allies.

Finally, we consider whether unpaid violations appear to be driven by an income effect. We include the logarithm of GDP per capita in 1998 in U.S. dollars taken from the World Development Indicators in most specifications. Country-level income per capita is strongly correlated with corruption and with the rule of law, and may be caused in part by underlying corruption levels, complicating efforts to disentangle corruption effects from income effects. As we discuss below, despite this strong correlation the main corruption results are robust to including a linear income control. Second, we include the ratio of government bureaucrats' salaries to GDP per capita (using data from Schiavo-Campo et al 1999) for the early 1990s (exact year differs by country) to account for the possibility bureaucrats occupy different positions in the national income distribution.

Our sample consists of all countries that had 1998 populations greater than 500,000 according to the World Development Indicators, and for which basic country-level data were available. Table 2 presents summary statistics for both the country-level and diplomat-level variables.

4. Empirical Results

The main econometric specification in the cross-country analysis is presented in equation 1:

$$\log(1+\text{Average annual unpaid parking violations})_i = \alpha + \beta_1 \log(\text{Diplomats})_i + \beta_2 \text{Corruption}_i + X_i'\gamma + \varepsilon_i \qquad (1)$$

where *i* denotes the country, *Corruption* is the 1998 country corruption index, and *X* is a vector of other country controls, including region fixed effects, the log of GDP per capita in 1998, among others depending on the specification, and ε is a standard white noise disturbance term.

The New York City unpaid parking violations measure is robustly positively correlated with the existing country corruption index conditional on the number of U.N. mission diplomats for that country in New York City (Table 3, regression 1). The relationship is roughly linear (Figure 2). The coefficient

estimate on the country corruption index is robust to the inclusion of log per capita income (regression 2) and also to the log of the number of vehicles registered to each mission as a control (regression 3),[12] though the point estimate drops by nearly half using the income control. The result is also robust to controlling for the average government wage relative to per capita income (regression 4) and to region fixed effects (regression 5). The regions with the greatest average number of unpaid parking violations relative to the reference region (North America and the Caribbean) are Africa and the Middle East. Note that while the coefficient on corruption is robustly significantly significant across these specifications, the coefficient on country per capita income is sensitive to the choice of sample and covariates.

The strong relationship between the parking violation corruption measure and the country corruption index also holds if the dependent variable is log(1 + Average annual unpaid parking violations / Diplomats) across specifications (Table 4), is robust to specifications where log(Diplomats) is included as an additional control (results not shown), and similarly holds if a tobit specification is used rather than OLS (Appendix Table A1).

We obtained similar data on parking violations by embassy diplomats in London as a further robustness check. This information is reported annually in the minutes of the U.K. House of Lords, as is information on the number of diplomats from each country residing in London. We use data for the years 1998-2002 to best match the New York City analysis. The London data is coarser than the New York City data in several ways. First,, only country violation totals are reported (rather than the detailed micro-data available for New York City), and countries with fewer than ten violations are not reported. Further, the fact that foreign embassies are scattered throughout London further complicates the interpretation relative to New York City where U.N. missions are co-located in Midtown Manhattan and thus diplomats face a similar parking environment. Despite these differences, the results imply a relationship between country corruption and diplomatic parking violations in London that is remarkably similar to the estimated effects for U.N. diplomats in New York. In regressions analogous to Table 3 but using London parking violations

[12] A specification using fixed effects for the number of vehicles per mission generates similar results (results not shown). Further, these estimated fixed effects are uniformly increasing in the number of vehicles, implying a monotonic relationship consistent with the linear functional form we report in the table.

as the dependent variable, the coefficient estimate on the country corruption index takes on values ranging between 0.38 and 0.70, and these effects are statistically significant at over 90% confidence across all OLS and tobit specifications (results not shown).

The coefficient estimate on the country corruption measure in the New York City data remains positive and large (0.3) but loses statistical significance if quadratic and cubic polynomials for the log of country per capita income are included controls, in part because standard errors increase (regression not shown). However, the implied relationship between country per capita income and parking violations is non-monotonic: it rises up through (roughly) average per capita income in the sample, before declining. This pattern argues strongly against the explanation that richer countries are simply able to purchase more parking spots for their diplomats, in which case we would expect a monotonic negative relationship between country income and parking violations. We prefer to focus on the specification with a linear log per capita income control since doing so most directly addresses theoretically well-motivated concerns about such monotonic income effects, rather than including additional highly collinear income controls.[13]

Since we can follow individual diplomats during their tenure at the U.N., we examine the related question of whether there is any evolution of diplomat behavior while in New York City. Conceptually, the relative plausibility of socialization to U.S. norms versus convergence to a uniform high corruption norm is unclear. If convergence is to U.S. corruption norms, individuals from high corruption countries should have declining parking violations over time, but there be should be no change in behavior for diplomats from the low corruption societies. Alternatively, individuals may begin their stay in NYC unsure as to the extent they can get away with parking violations. Once they successfully "get away with it" a few times (or hear stories about others getting away with it) and learn about the reality of zero enforcement, diplomats may become bolder in their violations. Thus convergence to this "zero enforcement" norm predicts increasing parking violations over time, particularly among diplomats from low corruption countries. In practice to estimate these effects we use a regression equation of the form:

[13] The strong empirical relationship between country corruption and income may theoretically reflect causal impacts in both directions (poorer countries become more corrupt, or corrupt countries become poorer), and this complicates the interpretation of regressions where both terms are included as controls.

$$\log(1 + \text{Monthly unpaid parking violations})_{ijt}$$

$$= \alpha_t + \beta_1 \log(\text{Months in NYC})_{ijt} + \beta_2\{\log(\text{Months in NYC})_{ijt} * \text{Corruption}_i\} + X_{ijt}'\gamma + \varepsilon_{ijt} \qquad (2)$$

where *i* again denotes a country and *j* denotes an individual diplomat from that country in month t, X_{ijt} is a vector of individual diplomat characteristics, and the final term is the error, which is allowed to be correlated across monthly observations for the same individual. We include month fixed effects (α_t) in all specifications, and also sometimes include diplomat fixed effects (α_{ij}). The two key terms in this analysis are β_1, the effect of increased time spent working as a consular official in New York City on parking violations for diplomats from countries with a corruption index of zero (corresponding to average corruption in the sample), and β_2, the differential time effect for diplomats from countries with higher corruption.

The frequency of unpaid violations increases rapidly and statistically significantly with tenure in New York City (Table 5, regression 1). On average parking violations increase by 8-18% with a doubling of the length of tenure in New York City. This result is robust to the inclusion of diplomat fixed effects (regression 2), and to the use of a discrete measure of violations (regressions 4 and 5). In contrast to models of convergence to U.S. corruption norms, we do not find a negative interaction effect of home-country corruption levels and tenure in New York. Rather the coefficient estimate on this interaction term is positive and statistically significant, implying that there is a divergence in the rate of violations over time, with diplomats from high corruption countries showing increasingly more violations relative to diplomats from low corruption countries over time, perhaps as they learn about the reality of diplomatic immunity. However, the point estimates indicate that even diplomats from very low corruption countries (those with corruption index scores below -2, say) show some smaller increases in violations over time. Finally, we note that the results are virtually identical if we repeat the analysis dropping individuals that arrived only after the earliest U.N. Bluebook was published (results not shown), which allows us to more accurately capture date of arrival but reduces the sample. An additional robustness check based on a split of the sample by country average parking violations also generated similar results (results not shown).

Various measures of proximity to the U.S. are correlated with fewer unpaid parking violations. First, the log of the weighted average distance between a country's population and the U.S. population is strongly positively correlated with parking violations, even conditional on world region fixed effects (Table 6, regression 1), indicating that diplomats from countries physically closer to the U.S. have many fewer New York City violations. The exact reasons for this pattern are elusive, but greater trade, migration, and tourism between the countries are possible explanations.[14]

The Pew dataset provides a measure of popular attitudes towards the U.S. in a subset of 42 countries, and here we find that diplomats from countries in which popular attitudes are unfavorable are significantly more likely to have unpaid parking violations (Table 6, regression 2). The estimated effect is large: a one standard deviation increase in the extent of unfavorable views leads to a more than doubling of parking tickets. One possible explanation for this result, which would lead to a spurious correlation, is that individuals in countries that hold negative views about other countries in general also tend to be corrupt. However, the result remains robust when we include an additional attitude control that reflects responses to a parallel question on respondents' dislike of a neighboring country (regression 3). The coefficient estimate on this additional control is near zero and not statistically significant while the coefficient estimate on views towards the U.S. remains nearly unchanged and statistically significant at over 90% confidence. The main limitation of the analysis in regressions 2 and 3 is the small sample size of only 42 countries[15], the countries for which there is Pew survey data. In contrast, the association between the proportion of Muslim population in a country, which is widely thought to be related to anti-American popular attitudes, is not significantly related to unpaid parking violations (regression 5) whether or not region fixed effects are included as controls (results not shown).

The relationship between unpaid New York City parking violations and the country corruption index remains qualitatively similar, but becomes somewhat weaker, during the post-enforcement period

[14] Trade with the United States is indeed negatively correlated with diplomats' parking violations, but this effect loses statistical significant when we control for geographic distance to the U.S. (results not shown), suggesting there are other factors beyond trade alone.

[15] This decline in sample size is responsible for the loss of statistical significance for the coefficient estimate on *Corruption*, which nonetheless remains nearly identical in magnitude to the other specifications.

after November 2002 (Table 7, regressions 1 and 2). This is in part because overall levels of parking violations fell dramatically (Figure 1). The same is true for the Pew measure of unfavorable attitudes towards the U.S. (regression 3), which remains positively and statistically significantly correlated with parking violations. Finally, we note that countries that had higher levels of U.S. economic aid show sharp drops in parking violations after November 2002 (regression 4), although the point estimate on the aid coefficient was similarly negative even in the pre-enforcement period. Thus it does not appear that the new policy of linking U.S. foreign aid to unpaid parking tickets appears was an important component of the decline in violations.

Figure 1 indicates that there was a sharp drop in violations in the months following the September 11th, 2001 attacks in New York City, and we find that countries with larger proportions of Muslim population experience particularly pronounced declines. This finding holds in a specification containing country and month fixed effects (regression 1), when additional country-specific time trends are included (regression 2), and with an income control (regression 3). Potential explanations for this result included the possibility that governments in predominantly Muslim countries exerted greater pressure on their diplomats to limit violations in order to avoid arousing local ire in New York City, or alternatively that Muslim diplomats may themselves have wished to be unobtrusive given the surge of anti-Muslim feeling and violence in the wake of the 9/11 attacks. One further potential explanation – that missions from predominantly Muslim countries withdrew diplomats for safety reasons – can be ruled out: the U.N. Bluebook shows no post-9/11 decline in the number of diplomats from predominantly Muslim countries posted in New York (regression not shown).

Further Robustness Checks and Alternative Explanations

As noted in the introduction, informal or formal social sanction against diplomats in the home country could be partially responsible for restraining parking violations in some cases. In such cases, diplomats' behaviors are better interpreted as an indication of their home country's norms or culture rather than their own personal values. We acknowledge this possibility but note that this account remains consistent with

our interpretation of the level of New York City parking violations as a revealed preference measure of corruption for government officials from a certain country, in the absence of formal legal enforcement.

Nonetheless, two findings argue against this alternative interpretation as the main driver of our findings. First, a Lexis-Nexis search of 504 European news outlets (English language or in translation) using the terms DIPLOMATS and PARKING and NEW YORK yielded only 25 stories during the entire study period, and these stories were concentrated in just four countries (the United Kingdom, Germany, France, and Russia). Further, with the exception of several Russian articles, the stories were about the general problem of diplomatic parking violations in New York City and the 2002 crackdown, rather than reporting on the behavior of home country diplomats. The possibility of sanctions for returning diplomats who accumulated parking tickets while abroad is apparently not a leading media issue, in Europe at least.

Second, we considered whether unpaid parking violations early in an official's tenure at the United Nations in New York City is correlated with the length of his employment there, and further whether these early violations interact in any way with corruption in the country of origin (i.e., perhaps violators from low corruption countries could be punished by their government and sent home early). We find no evidence for any such effects of parking violations on diplomat tenure (regressions not shown).

Obviously, neither of these two findings is completely conclusive. In equilibrium the number of violations committed will reflect choices made, in part, to avoid home country sanctions. But they are certainly consistent with the view that home country enforcement was typically weak or nonexistent.

An additional estimation concern is that our country corruption measure may be picking up an income effect rather than a corruption effect. Wealthier diplomats could potentially have greater means to simply pay off any tickets or use parking garages, for example. However, this also seems unlikely. First, the inclusion of paid violations in our parking violations measure has no effect on the main results (Appendix Table A2). We also find that the index of country corruption explains unpaid parking violations even conditional on a linear national per capita income control (and also controlling for the ratio of bureaucratic wages to per capita income), although our results are attenuated somewhat by the inclusion of higher order polynomial income controls, as discussed above.

Finally, we examined the predictors of the most socially egregious New York City parking violations, the rationale being that relatively impoverished diplomats from poor countries might be forced to park illegally in order to avoid the extra expense of renting a parking spot, but might still try to do so in a manner that avoids excessive negative social externalities. As indications of extreme violations, we in particular consider parking in front of a fire hydrant, and violations for double-parking on East-West streets between 10th and 100th Streets in Manhattan. These are relatively narrow and heavily traveled roads and double parking will often completely block passage. The main results hold robustly for both types of violations (Appendix Table A3); in other words, diplomats from high corruption countries are much more likely to commit the most egregious parking violations. Hence our results are not driven solely by behaviors causing minimal social harm (i.e., an expired meter in a legal parking spot). Once again, we acknowledge that these tests cannot conclusively rule out that income is playing some role in driving the country corruption result, but the weight of the evidence argues against this explanation.

A final consideration is whether there is a differential selection mechanism for U.N. diplomats across countries that might account for the pattern we observe. In particular, it would problematic if the relatively more corrupt government officials (within the distribution of officials in a country) were selected for New York postings from high corruption countries. We have no rigorous statistical test to explore this possibility, but we feel it is unlikely to be of first-order importance for several reasons. First, U.N. mission staff are selected along a range of common characteristics, including English-language skills, education and diplomatic experience, and this reduces the gap between diplomats in terms of their personal attributes. Further, we are not concerned with differential selection of "corrupt" types into the government bureaucracy versus the private sector across countries, since we are interested in the behavior of actual government civil servants, like the U.N. mission diplomats we observe. So any selection story must pertain to selection across branches of the civil service. To the extent that this selection effect is at work, we might expect it to operate in the opposite direction. For example, in the Transparency International 2005 survey of the bureaucracy in Kenya – a reasonably high corruption country –

diplomatic missions were rated as the fifth least corrupt among all 34 government ministries.[16] It appears that, if anything, U.N. postings offer fewer opportunities for graft than many other government positions (e.g., in customs) and thus might likely attract the relatively less corrupt bureaucrats in high corruption countries. This would dampen the observed correlation between parking violations and home-country corruption rather than generating a spurious positive correlation.

5. Conclusion

We exploit a unique natural experiment – the stationing in New York City of thousands of government officials from 146 countries around the world – in a setting of zero legal enforcement of parking violations to construct a revealed preference measure of official corruption. We find that this measure is strongly correlated with existing measures of home country corruption. This finding suggests that cultural or social norms related to corruption are quite persistent: even when stationed thousands of miles away, diplomats behave in a manner highly reminiscent of officials in the home country. Norms related to corruption are apparently deeply engrained, and factors other than legal enforcement are important determinants of corruption behavior.

The related second empirical finding is the strong negative relationship between affinity for the United States in the diplomat's home country and parking violations in New York. This provides real-world empirical evidence that sentiments matter in economic decision-making in general and for corruption decisions in particular. One implication of this finding is that government officials' "feelings" towards their own nation – for instance, their extent of patriotism, national pride, or strength of national identity – could also be factors in their corruption decision within the home country.

One important message from our empirical results is that corruption norms are sticky. This result raises the critical question of whether there are policy interventions that can modify corruption norms

[16] This report may be found at http://ww1.transparency.org/surveys/dnld/kenya_bribery_index2005.pdf, accessed May 5, 2006. Transparency International reports on corruption across branches of government for other countries can be found at http://www.transparency.org/policy_research/surveys_indices/asia_pacific, although to our knowledge only in the case of Kenya do they explicitly rank diplomats relative to other branches of government.

over time. For example, the Bloomberg administration's enforcement efforts in New York City in 2002 were extremely successful in changing diplomats' behaviors, and it would be useful to know whether these changes might additionally have had persistent effects on norms once individuals become habituated to rule compliant behavior. Such long-run effects of temporary interventions necessarily rely on a shift in norms (or tastes), and would be consistent with the findings of Di Tella and Schargrodsky (2003) on the persistent effects of auditing on corruption in Argentina. Unfortunately, our context does not accommodate this analysis.

Finally, our methodology of inexpensively generating cross-country data could potentially be applied to other settings where comparable individuals from across countries are present in the same place for a period of concentrated activity (the Olympics Games, for example). In this spirit, in separate work we are preparing to study the economic decisions of taxi drivers waiting to pick up passengers at John F. Kennedy International Airport in New York City. This subject pool similarly provides us with a vast population of thousands of individuals drawn from societies throughout the world. We hope that this, and other variants on the methodology, will be useful in informing our understanding of how cultural and social backgrounds lead to long-run differences in beliefs, tastes, values, and economic decisions.

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Tables and Figures

Table 1: Average Unpaid Annual New York City Parking Violations per Diplomat, 11/1997 to 11/2002

Corruption rank	Country name	Violations per diplomat	U.N. Mission diplomats in 1998	Country code
1	KUWAIT	246.2	9	KWT
2	EGYPT	139.6	24	EGY
3	CHAD	124.3	2	TCD
4	SUDAN	119.1	7	SDN
5	BULGARIA	117.5	6	BGR
6	MOZAMBIQUE	110.7	5	MOZ
7	ALBANIA	84.5	3	ALB
8	ANGOLA	81.7	9	AGO
9	SENEGAL	79.2	11	SEN
10	PAKISTAN	69.4	13	PAK
11	IVORY COAST	67.1	10	CIV
12	ZAMBIA	60.4	9	ZMB
13	MOROCCO	60.0	17	MAR
14	ETHIOPIA	59.7	10	ETH
15	NIGERIA	58.6	25	NGA
16	SYRIA	52.7	12	SYR
17	BENIN	49.8	8	BEN
18	ZIMBABWE	45.6	14	ZWE
19	CAMEROON	43.6	8	CMR
20	MONTENEGRO & SERBIA	38.0	6	YUG
21	BAHRAIN	37.7	7	BHR
22	BURUNDI	37.7	3	BDI
23	MALI	37.4	5	MLI
24	INDONESIA	36.1	25	IDN
25	GUINEA	34.8	5	GNB
26	SOUTH AFRICA	34.0	19	ZAF
27	SAUDI ARABIA	33.8	12	SAU
28	BANGLADESH	33.0	8	BGD
29	BRAZIL	29.9	33	BRA
30	SIERRA LEONE	25.6	4	SLE
31	ALGERIA	25.2	13	DZA
32	THAILAND	24.5	13	THA
33	KAZAKHSTAN	21.1	9	KAZ
34	MAURITIUS	20.5	4	MUS
35	NIGER	19.9	3	NER
36	CZECH REPUBLIC	18.9	7	CZE
37	LESOTHO	18.8	6	LSO
38	BOTSWANA	18.5	8	BWA
39	BHUTAN	18.4	5	BTN
40	SRI LANKA	17.2	5	LKA
41	CHILE	16.5	14	CHL
42	TUNISIA	16.5	11	TUN
43	NEPAL	16.5	6	NPL

44	IRAN	15.7	20	IRN
45	FIJI	15.5	3	FJI
46	ITALY	14.6	16	ITA
47	LIBERIA	13.5	6	LBR
48	MALAWI	13.0	6	MWI
49	PARAGUAY	13.0	6	PRY
50	RWANDA	12.9	3	RWA
51	UKRAINE	12.9	14	UKR
52	SPAIN	12.7	15	ESP
53	PHILIPPINES	11.5	20	PHL
54	GHANA	11.3	10	GHA
55	MAURITANIA	11.2	5	MRT
56	GUINEA BISSAU	10.8	10	GIN
57	ESTONIA	10.5	3	EST
58	MONGOLIA	10.2	5	MNG
59	ARMENIA	10.1	4	ARM
60	COSTA RICA	10.1	19	CRI
61	COMOROS	9.9	3	COM
62	TOGO	9.9	5	TGO
63	VIETNAM	9.8	15	VNM
64	GEORGIA	9.7	8	GEO
65	CHINA (PRC)	9.5	69	CHN
66	YEMEN	9.1	8	YEM
67	VENEZUELA	9.1	16	VEN
68	PORTUGAL	8.8	16	PRT
69	UZBEKISTAN	8.8	5	UZB
70	MADAGASCAR	8.7	8	MDG
71	TANZANIA	8.3	8	TZA
72	LIBYA	8.2	9	LBY
73	KENYA	7.7	17	KEN
74	CONGO (BRAZZAVILLE)	7.7	6	COG
75	CROATIA	6.5	9	HRV
76	DJIBOUTI	6.5	3	DJI
77	SLOVAK REPUBLIC	6.4	12	SVK
78	FRANCE	6.1	29	FRA
79	INDIA	6.1	18	IND
80	LAOS	6.1	9	LAO
81	TURKMENISTAN	5.8	4	TKM
82	PAPUA NEW GUINEA	5.5	3	PNG
83	HONDURAS	5.4	6	HND
84	SLOVENIA	5.2	8	SVN
85	KYRGYZSTAN	5.2	5	KGZ
86	NICARAGUA	4.9	9	NIC
87	URUGUAY	4.4	11	URY
88	SWAZILAND	4.3	7	SWZ
89	TAJIKISTAN	4.3	4	TJK
90	NAMIBIA	4.2	11	NAM
91	MEXICO	4.0	19	MEX
92	ARGENTINA	3.9	19	ARG
93	SINGAPORE	3.5	6	SGP

94	ROMANIA	3.5	10	ROM
95	UGANDA	3.5	7	UGA
96	HUNGARY	3.3	8	HUN
97	MACEDONIA	3.3	4	MKD
98	BOLIVIA	3.1	9	BOL
99	PERU	3.1	9	PER
100	HAITI	3.0	9	HTI
101	JORDAN	2.9	9	JOR
102	BELARUS	2.7	8	BLR
103	BELGIUM	2.7	14	BEL
104	CYPRUS	2.5	11	CYP
105	GUYANA	2.3	5	GUY
106	AUSTRIA	2.2	21	AUT
107	GABON	2.2	8	GAB
108	RUSSIA	2.0	86	RUS
109	LITHUANIA	2.0	7	LTU
110	EL SALVADOR	1.7	10	SLV
111	POLAND	1.7	17	POL
112	GAMBIA	1.5	8	GMB
113	MALAYSIA	1.4	13	MYS
114	TRINIDAD AND TOBAGO	1.4	6	TTO
115	LEBANON	1.3	3	LBN
116	GERMANY	1.0	52	DEU
117	ERITREA	0.8	3	ERI
118	MOLDOVA	0.7	4	MDA
119	KOREA (SOUTH)	0.4	33	KOR
120	DOMINICAN REPUBLIC	0.1	22	DOM
121	FINLAND	0.1	18	FIN
122	GUATEMALA	0.1	9	GTM
123	NEW ZEALAND	0.1	8	NZL
124	SWITZERLAND	0.1	10	CHE
125	UNITED KINGDOM	0.0	31	GBR
126	NETHERLANDS	0.0	17	NLD
127	UNTED ARAB EMIRATES	0.0	3	UAE
128	AUSTALIA	0.0	12	AUS
129	AZERBAIJAN	0.0	5	AZE
130	BURKINA FASO	0.0	5	BFA
131	CENTRAL AFRICAN REPUBLIC	0.0	3	CAF
132	CANADA	0.0	24	CAN
133	COLOMBIA	0.0	16	COL
134	DENMARK	0.0	17	DNK
135	ECUADOR	0.0	9	ECU
136	GREECE	0.0	21	GRC
137	IRELAND	0.0	10	IRL
138	ISRAEL	0.0	15	ISR
139	JAMAICA	0.0	9	JAM
140	JAPAN	0.0	47	JPN
141	LATVIA	0.0	5	LVA
142	NORWAY	0.0	12	NOR
143	OMAN	0.0	5	OMN

144	PANAMA	0.0	8	PAN
145	SWEDEN	0.0	19	SWE
146	TURKEY	0.0	25	TUR

Table 2: Descriptive statistics

Variable	Mean	Standard deviation	Observations
Panel A: Country-level data			
Annual unpaid New York City parking violations per diplomat, 11/1997-11/2002 [a]	2.06	1.41	146
Annual unpaid and paid New York City parking violations per diplomat, 11/1997-11/2002 [a]	0.28	0.35	146
Annual unpaid New York City parking violations per diplomat, 11/2002-12/2005 [a]	1.88	1.85	146
log(Diplomats in the country U.N. Mission, 1998) [b]	2.21	0.69	146
log(1+Number of license plates registered to the country's U.N. Mission, 2006)[c]	1.97	0.90	146
Country corruption index, 1998 [d]	-0.01	1.01	146
log(Per capita income, 1998 US$) [e]	7.39	1.58	146
Average government wage / Country per capita income, early 1990s[f]	2.83	2.38	92
log(Weighted distance between populations) [g]	9.11	0.42	146
Proportion Muslim population, 2004 [h]	0.28	0.37	146
Unfavorable views towards the United States [i]	2.23	0.49	42
Unfavorable views towards other countries [i]	2.25	0.51	42
Received U.S. economic aid, 1998 [j]	0.69	0.47	144
Received U.S. military aid, 1998 [j]	0.63	0.48	144
Panel B: Diplomat-level data			
Monthly New York City parking violations, 11/1997-11/2002 [a]	0.32	0.65	14408
Length of time at the U.N. Mission in New York City (in months) [b]	24.98	16.07	14408

Sources:
[a] New York City, Parking Violations Database (provided to the authors by the New York City Department of Finance in December 2005).
[b] United Nations Bluebook 1998.
[c] U.S. Department of State Office of Foreign Missions (provided to the authors by Deputy Director Murray Smith in April 2006).
[d] Composite index from Kaufmann et al. (2005), but here higher values indicate more corruption.
[e] World Development Indicators (2005).
[f] Schiavo-Campo et al. (1999); exact year differs by country.
[g] Mayer and Zignago (2005)
[h] US Department of State (2004)
[i] Pew Global Attitudes Survey 2002.
[j] Data from Kuziemko and Werker (2006).

Table 3: Country Characteristics and Unpaid New York City Parking Violations (in logs), 11/1997 to 11/2002 (pre-enforcement)

	Dependent variable: log (1 + Annual NYC Parking Violations)				
	(1)	(2)	(3)	(4)	(5)
log(Diplomats)	0.86***	1.04***	0.56	1.28***	1.12***
	(0.24)	(0.24)	(0.36)	(0.31)	(0.26)
Country corruption index, 1998	1.04***	0.56**	0.62**	0.92***	0.72***
	(0.15)	(0.24)	(0.24)	(0.33)	(0.25)
log(Per capita income, 1998 US$)		-0.42**	-0.36**	-0.19	-0.23
		(0.16)	(0.16)	(0.25)	(0.19)
log(1 + Diplomatic Vehicles)			0.54**		
			(0.26)		
Average government wage / country per capita income				0.03	
				(0.11)	
Africa region indicator variable					2.92***
					(0.67)
Asia region indicator variable					2.23***
					(0.72)
Europe region indicator variable					2.30***
					(0.66)
Latin America region indicator variable					1.60**
					(0.77)
Middle East region indicator variable					2.83***
					(0.89)
Oceania region indicator variable					1.99**
					(0.91)
Observations	146	146	146	92	146
R^2	0.23	0.26	0.26	0.33	0.34
Mean of dependent variable (s.d.)	3.8 (2.1)	3.8 (2.1)	3.8 (2.1)	3.8 (2.2)	3.8 (2.1)

Notes: OLS regressions, White robust standard errors. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Table 4: Country Characteristics and Unpaid New York City Parking Violations per Diplomat (in logs), 11/1997 to 11/2002 (pre-enforcement) – alternative specification

	Dependent variable: log (1 + Annual NYC Parking Violations/Diplomat)			
	(1)	(2)	(3)	(4)
Country corruption index, 1998	0.61***	0.27*	0.49**	0.38**
	(0.08)	(0.15)	(0.21)	(0.17)
log(Per capita income, 1998 US$)		-0.27**	-0.08	-0.11
		(0.11)	(0.17)	(0.13)
Average government wage / country per capita income			0.05	
			(0.08)	
Region indicator variables	No	No	No	Yes
Observations	146	146	92	146
R^2	0.19	0.22	0.25	0.32
Mean of dependent variable (s.d.)	2.1 (1.4)	2.1 (1.4)	2.0 (1.4)	2.1 (1.4)

Notes: OLS regressions, White robust standard errors. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Table 5: Unpaid Parking Violations over Time for Diplomats, 11/1997 to 11/2002 (pre-enforcement)

	Dependent variable:				
	log(1 + Monthly NYC Parking Violations)			Any Monthly NYC Parking Violation	
	(1)	(2)	(3)	(4)	(5)
Log(Length of time in New York City (in months))	0.083***	0.185***	0.185***	0.147***	0.146***
	(0.020)	(0.024)	(0.024)	(0.015)	(0.015)
Log(Length of time in New York City) * Country corruption index, 1998			0.030**		0.026***
			(0.014)		(0.008)
Month Fixed Effects	Yes	Yes	Yes	Yes	Yes
Diplomat Fixed Effects	No	Yes	Yes	Yes	Yes
Observations	14408	14408	14408	14408	14408
R^2	0.03	0.44	0.45	0.32	0.32
Mean of dependent variable (s.d.)	0.32 (0.65)	0.32 (0.65)	0.32 (0.65)	0.32 (0.65)	0.32 (0.65)

Notes: OLS regressions, White robust standard errors with clustering by diplomat. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence. Observations are at the diplomat-month level.

Table 6: Unpaid Parking Violations and Proximity to the U.S., U.S. Aid, and Affinity with the U.S., 11/1997 to 11/2002 (pre-enforcement)

	Dependent variable: log (1 + Annual NYC Parking Violations)				
	(1)	(2)	(3)	(4)	(5)
log(Diplomats)	1.15***	0.46	0.41	1.11***	1.13***
	(0.25)	(0.51)	(0.53)	(0.27)	(0.26)
Country corruption index, 1998	0.72***	0.72	0.83	0.70***	0.71***
	(0.24)	(0.52)	(0.56)	(0.25)	(0.25)
log(Per capita income, 1998 US$)	-0.24	-0.46	-0.42	-0.32	-0.23
	(0.19)	(0.35)	(0.36)	(0.22)	(0.19)
log(Weighted distance of population from U.S.)	1.65***				
	(0.58)				
Unfavorable views towards the U.S. (Pew)		2.55**	2.28*		
		(1.14)	(1.27)		
Unfavorable views towards other countries (Pew)			0.57		
			(0.66)		
Received U.S. economic aid				-0.70	
				(0.52)	
Received U.S. military aid				0.56	
				(0.35)	
Proportion Muslim population					0.20
					(0.47)
Region indicator variables	Yes	Yes	Yes	Yes	Yes
Observations	146	42	42	144	146
R^2	0.37	0.47	0.48	0.35	0.34
Mean of dependent variable (s.d.)	3.8 (2.1)	4.4 (2.1)	4.4 (2.1)	3.8 (2.1)	3.8 (2.1)

Notes: OLS regressions, White robust standard errors. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Table 7: Country Characteristics and Unpaid New York City Parking Violations (in logs), 11/2002 to 12/2005 (post-enforcement)

	Dependent variable: log (1 + Annual NYC Parking Violations)			
	(1)	(2)	(3)	(4)
log(Diplomats)	0.42***	0.52***	0.24	0.53***
	(0.11)	(0.12)	(0.29)	(0.13)
Country corruption index, 1998	0.30***	0.33***	0.41	0.40***
	(0.07)	(0.11)	(0.31)	(0.12)
log(Per capita income, 1998 US$)		0.04	0.01	-0.05
		(0.09)	(0.20)	(0.10)
Unfavorable views towards the U.S. (Pew)			1.29***	
			(0.40)	
Received U.S. economic aid				-0.53**
				(0.23)
Received U.S. military aid				0.08
				(0.17)
Region indicator variables	No	Yes	Yes	Yes
Observations	146	146	42	144
R^2	0.14	0.24	0.34	0.27
Mean of dependent variable (s.d.)	1.1 (0.9)	1.1 (0.9)	1.3 (0.9)	1.1 (0.9)

Notes: OLS regressions, White robust standard errors. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Table 8: Unpaid New York City Parking Violations and Muslim Population after September 11, 2001

	Dependent variable: log(1 + Monthly NYC Parking Violations)		
	(1)	(2)	(3)
Post 9/11 * Proportion Muslim population	-0.32**	-0.48**	-0.32**
	(0.15)	(0.19)	(0.16)
Post 9/11 * log(Per capita income, 1998 US$)			-0.007
			(0.053)
Country Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Country-specific time trends	No	Yes	No
Observations	7493	7493	7493
R^2	0.78	0.82	0.78
Mean of dependent variable (s.d.)	2.7 (1.7)	2.7 (1.7)	2.7 (1.7)

Notes: OLS regressions, White robust standard errors with clustering by country. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence. Observations are at the country-month level, for the period December, 1997 – November, 2002.

Appendix Table A1: Country Characteristics and Unpaid New York City Parking Violations (in logs), 11/1997 to 11/2002 (pre-enforcement) – tobit specifications

	Dependent variable: log (1 + Annual NYC Parking Violations)			
	(1)	(2)	(3)	(4)
log(Diplomats)	0.89***	1.11***	1.35***	1.17***
	(0.27)	(0.28)	(0.35)	(0.27)
Country corruption index, 1998	1.19***	0.63**	1.05**	0.83***
	(0.19)	(0.29)	(0.40)	(0.30)
log(Per capita income, 1998 US$)		-0.48**	-0.22	-0.27
		(0.20)	(0.31)	(0.22)
Average government wage / country per capita income			0.01	
			(0.11)	
Region indicator variables	No	No	No	Yes
Observations	146	146	92	146
Mean of dependent variable (s.d.)	3.8 (2.1)	3.8 (2.1)	3.8 (2.2)	3.8 (2.1)

Notes: Tobit specifications. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Appendix Table A2: Total New York City Parking Violations, paid and unpaid (in logs), 11/1997 to 11/2002 (pre-enforcement)

	Dependent variable: log (1 + Annual NYC Parking Violations)			
	(1)	(2)	(3)	(4)
log(Diplomats)	1.00***	1.12***	1.38***	1.19***
	(0.21)	(0.21)	(0.28)	(0.22)
Country corruption index, 1998	0.96***	0.62***	1.14***	0.73***
	(0.15)	(0.22)	(0.31)	(0.23)
log(Per capita income, 1998 US$)		-0.29**	0.05	-0.14
		(0.15)	(0.24)	(0.17)
Average government wage / country per capita income			0.15**	
			(0.07)	
Region indicator variables	No	No	No	Yes
Observations	146	146	92	146
R^2	0.27	0.29	0.45	0.41
Mean of dependent variable (s.d.)	4.1 (1.8)	4.1 (1.8)	4.2 (1.9)	4.1 (1.8)

Notes: OLS regressions, White robust standard errors. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Appendix Table A3: New York City Parking Violations (in logs), egregious violation types, 11/1997 to 11/2002 (pre-enforcement)

	Dependent variable: log (1 + Annual Cross-town Double-parking)				Dependent variable: log (1 + Annual Fire Hydrant Violations)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Diplomats)	0.48***	0.55***	0.68***	0.62***	0.74***	0.85***	0.94***	0.92***
	(0.15)	(0.15)	(0.21)	(0.17)	(0.16)	(0.16)	(0.22)	(0.17)
Country corruption index, 1998	0.43***	0.24*	0.40**	0.30*	0.62***	0.30**	0.50**	0.42**
	(0.08)	(0.13)	(0.18)	(0.15)	(0.09)	(0.15)	(0.21)	(0.18)
log(Per capita income, 1998 US$)		-0.17*	-0.09	-0.11		-0.27**	-0.15	-0.20
		(0.09)	(0.15)	(0.11)		(0.11)	(0.16)	(0.13)
Average government wage / country per capita income			0.03				0.01	
			(0.06)				(0.06)	
Region indicator variables	No	No	No	Yes	No	No	No	Yes
Observations	146	146	92	146	146	146	92	146
R^2	0.14	0.16	0.22	0.27	0.23	0.26	0.32	0.34
Mean of dependent variable (s.d.)	1.1 (1.2)	1.1 (1.2)	1.1 (1.2)	1.1 (1.2)	1.7 (1.4)	1.7 (1.4)	1.7 (1.4)	1.7 (1.4)

Notes: OLS regressions, White robust standard errors. Statistically significantly different than zero at 90% (*), 95% (**), 99% (***) confidence.

Figure 1: Total Monthly New York City Parking Violations by Diplomats, 1997-2005 (log scale)

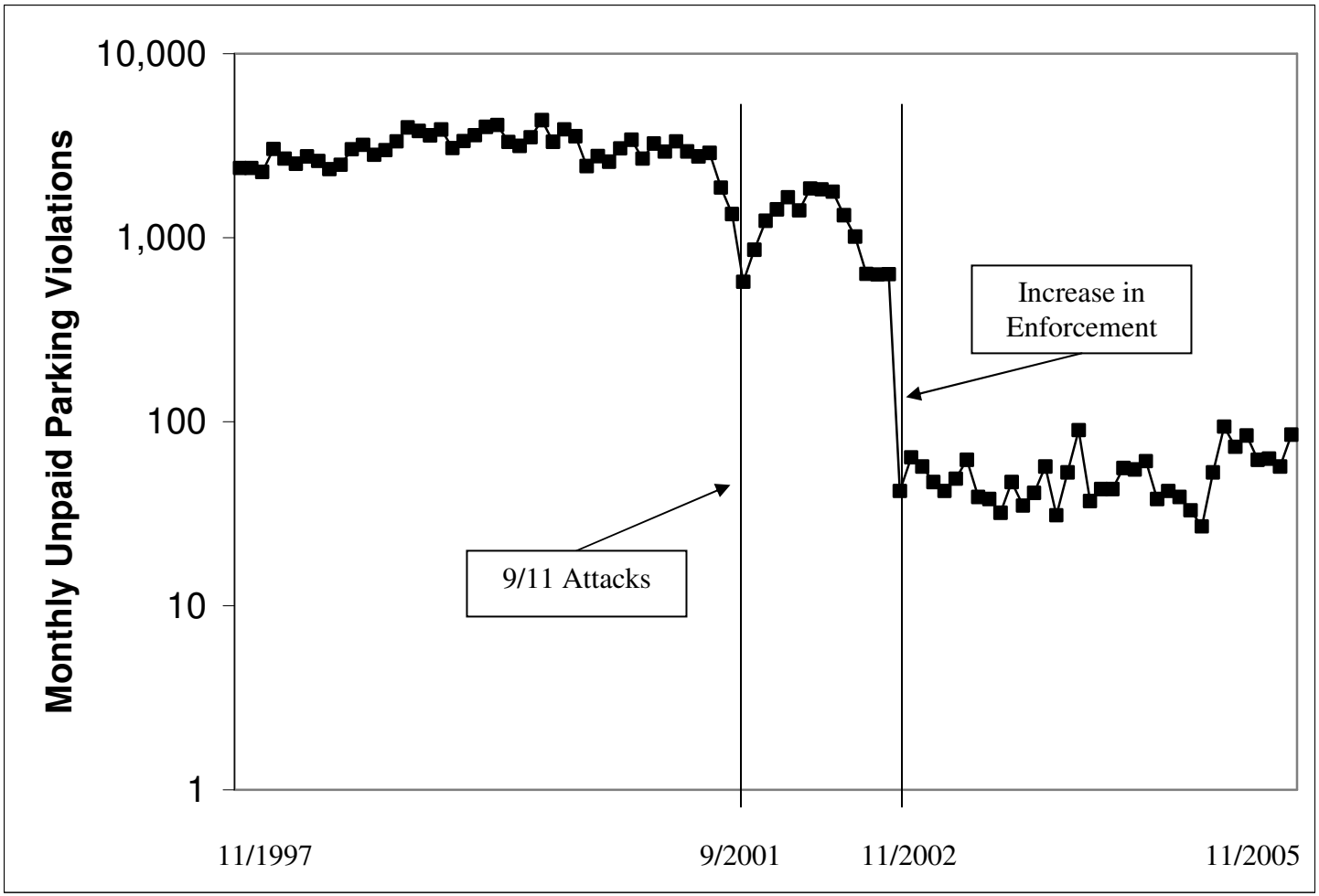
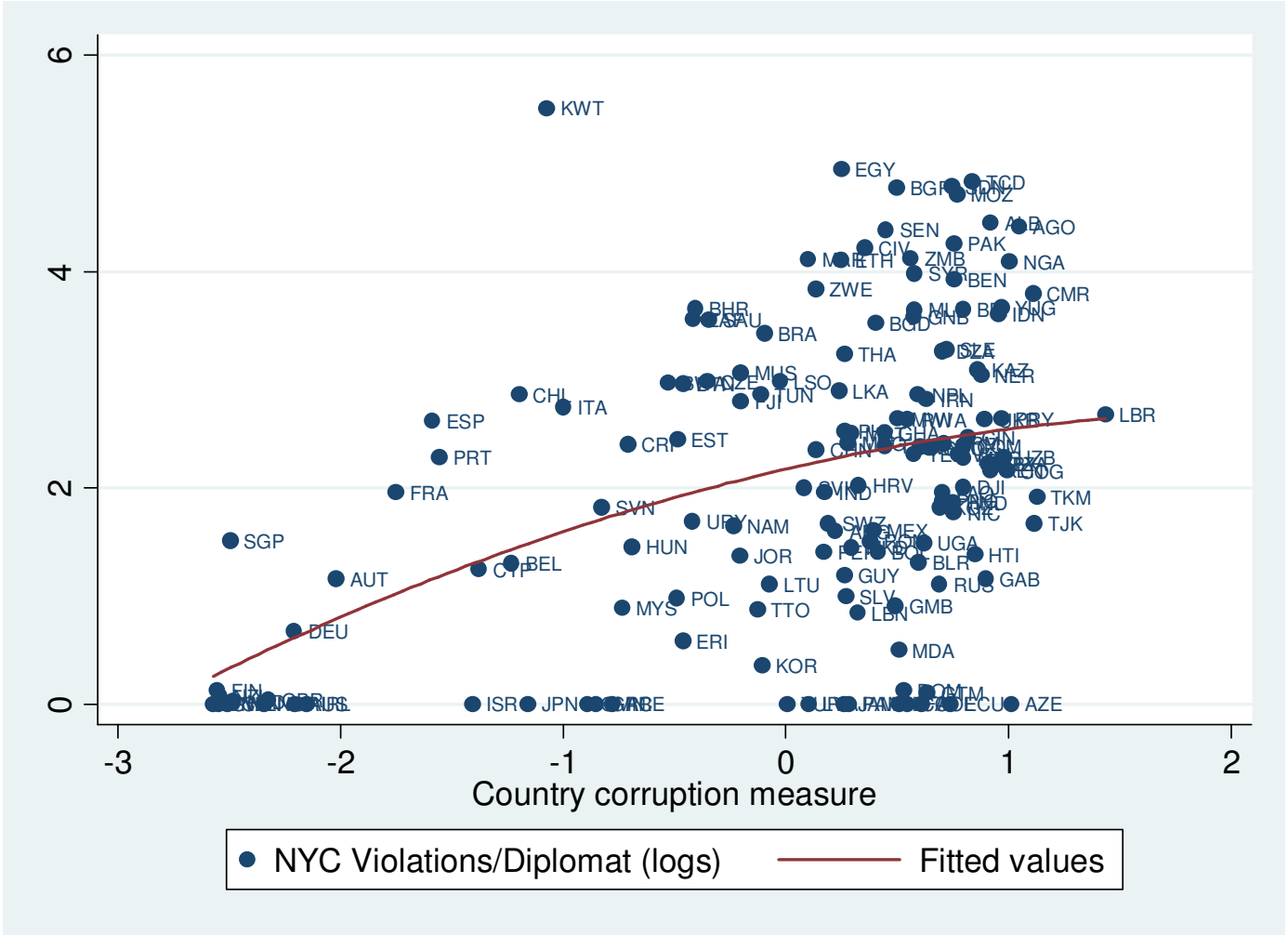


Figure 2: Country corruption and Unpaid New York City Parking Violations per diplomat (in logs), 11/1997 to 11/2002 (pre-enforcement)



Notes: Country abbreviations are presented in Table 1. The line is the quadratic regression fit. The y-axis is log(1+Annual NYC parking violations / Diplomat).

Data Appendix

(1) New York City Diplomatic Parking Violation Data

The New York City Department of Finance supplied listings of all unpaid parking violations of U.N. Missions. The violations covered the period from November 24, 1997 to November 21, 2005. In order to appear in the database, a violation had to go unpaid for at least 100 days. Data were at the level of the violation, and included the following entries for each violation:

- Summons: unique identification number for the violation
- License plate number of the violating car
- The person to whom the violating car was registered, often the mission itself
- Time of violation: included both hour and minute as well as calendar date
- Type of violation, e.g. "FIRE HYDRANT" or "EXPIRED METER"
- Street address of violation
- Initial dollar value of fine issued
- Additional dollar penalty for having not paid the fine on time
- Amount paid towards the fine, generally zero
- Name of country to which the car is registered

Data on U.N. diplomats' paid parking violations (violations that did not go into arrears) were made available to us in aggregate form by the New York City Department of Finance. For each country, we were given statistics for the pre-enforcement period of November 24, 1997 – October 31, 2002 and the post-enforcement period of November 1, 2002 – November 21, 2005.

(2) Country Corruption Index

We use the aggregate measure of Kaufmann et al (2005) for the year 1998. Data are available at: http://www.worldbank.org/wbi/governance/data.html#dataset

(3) World Region Classification

United Nations region code data, available at http://unstats.un.org/unsd/methods/m49/m49regin.htm, was used to classify countries into the following regions: (1) North America (including Carribbean), (2) South America, (3) Europe, (4) Asia, (5) Oceania, (6) Africa, (7) Middle East. The Middle East was defined as: Egypt, Iran, Pakistan, Bahrain, Cyprus, Iraq, Israel, Jordan, Kuwait, Lebanon, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, and Yemen.

(4) International Trade Data

Trade data (utilized only in unreported regressions) are taken from http://dataweb.usitc.gov/

(5) Geographic Distance From U.S.

Distance from the United States is taken from Mayer and Zignago (2005). Their measure uses city-level data to assess the geographic distribution of population inside each nation. The idea is to calculate distance between two countries based on bilateral distances between the largest cities of those two countries, those inter-city distances being weighted by the share of the city in the overall country's population. In practice, nearly identical results are obtained using the distance of countries' capitals from Washington, D.C.

(6) United Nations Bluebooks

The United Nations issues its list of mission personnel, or Bluebook, twice yearly. We utilize edition numbers 280 (May 1998) through 288 (August 2002). Documents were retrieved from the UN Official Document System (ODS), available at http://documents.un.org/advance.asp. Searching for the symbol

ST/SG/SER.A/### with truncation turned off returns the relevant Blue Book (where ### is the Blue Book edition number).

(7) Mission Staff Counts

Edition 280 (May 1998) was checked by hand to count the mission staff and spouses for each country in the Blue Book, producing the following variables.

- Mission: Indicator variable indicating whether the country had a U.N. mission
- Staff: Simple count of staff. Staff members are always listed with their surnames in bold

(8) Longitudinal Staff Data

Bluebook edition numbers 278 through 288 were converted into plain text format. A name-matching program then checked these text files against a list of names extracted from the NYC parking violations data. Names were converted to regular expressions to improve match quality (since names from parking violation data often used forward slashes in place of apostrophes and dashes). A name was considered to have matched (and thus to have been present at the date of the Bluebook's publication) if its first name and last name appeared on the same line in the Bluebook. If a name matched more one time in the same Blue Book, its matches were checked by hand. The matching program also recorded the country of the mission in which the match was found. This country was checked against the country as specified by the parking violation data to verify match accuracy. Finally, in a small number of cases (20 diplomats), we found that there were gaps in the individual's appearance in the Blue Book, even though in some cases parking violations in vehicles registered to these individuals took place during the purported absence. We omit these few observations from our analyses, but in practice their inclusion does not affect the results (not shown).

(9) Diplomatic Vehicles

Data were provided by Murray Smith, Deputy Director at the U.S. State Department's Office of Foreign Missions in April 2006. These data report counts of the number of vehicles with diplomatic license plates registered to each mission in early 2006.

(10) Muslim Population

Data were taken from the religious demography sections of the U.S. State Department's 2004 International Religious Freedom Report, available online at http://www.state.gov/g/drl/rls/irf/2004/

(11) US Military/Economic Foreign Aid Data

These data were provided to us by Iliana Kuziemko and Eric Werker. We utilize data on aid flows from 1998. See Kuziemko and Werker (2006) for details.

(12) London Parking Violations Data

Unpaid parking violations of embassy diplomats in London are reported annually in the House of Commons Hansard Written Notes, for all embassies with more than ten violations in the preceding year. We use data from 1998-2002 to best match our U.N. parking violations data. Data may be obtained by searching the parliamentary records for diplomatic parking violations at http://www.publications.parliament.uk/cgi-bin/semaphoreserver?DB=semukparl&FILE=search

(13) London Embassy Diplomatic Staff Counts

Data were obtained for 1998 from the London Diplomatic List, which is published annually and records all the representatives of foreign states and Commonwealth countries in London. It is compiled by the British Foreign & Commonwealth Office. Information on ordering is available at http://www.fco.gov.uk.