Determinants of Corruption: Government Effectiveness vs. Cultural Norms*†

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Abstract

In this paper we show that parking behavior of United Nations diplomats in New York City is strongly and consistently explained by the government effectiveness index of their respective countries. Government effectiveness index measures the quality of civil services, quality and quantity of public infrastructure as well as organizational structure of public offices. We compare our results with an earlier work which claims cultural norms of corruption to be a significant determinant of corruption. Our results show that controlling for the quality of government institutions, as defined by government effectiveness, reverses the coefficient on country corruption index and makes them statistically insignificant in *all* of the model specifications. Moreover, quite remarkably, we also find that the coefficient on the government effectiveness index is positive and statistically significant. Our results have important implications for anticorruption reforms which are advocated by multilaterals and foreign aid donors. If corruption is primarily controlled through government effectiveness, then interventions that focus on social norms or culture will be misplaced and unlikely to succeed.

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1 Introduction

It is commonly agreed that corruption is a major roadblock in the process of economic development. There has been a surge in anti-corruption initiatives undertaken by Multilateral institutions, in recent years, aimed at helping countries better deliver services to the poor. Corruption, however, remains a complex phenomenon which is under researched and poorly understood. The popular perception is that 'culture' is a significant determinant of corrupt behavior and social norms across countries can explain the variation in corruption level. This belief is corroborated in a recent paper by Fisman and Miguel (2007). We use the same technique and date set as this paper and make a fascinating finding in government effectiveness as a significant and arguably better explantion of corrupt behavior.

Understanding the relative importance of these potential causes of corruption is fundamental to policy recommendation for anti-corruption reforms. If corruption is primarily controlled through government effectiveness, then interventions that focus on social norms or culture will be misplaced and less likely to succeed.

This paper uses the same methodology and data as Fisman and Miguel (F&M 2007) but we discover an alternative story of corruption. Similar to F&M, we analyze the parking behavior of United Nations (UN) diplomats in New York City because parking illegally fits well with the standard definition of corruption i.e. "the abuse of entrusted power for private gain"[1] and this setting avoids the problem of differential legal enforcement which is a confounding factor. F&M show that until 2002, when the diplomats were immune from the local enforcement, their behavior was largely governed by cultural norms of corruption from their respective countries. Diplomats from highly corrupt countries[2] (as measured by the country corruption index) accumulated significantly higher unpaid parking violations. In 2002, when this diplomatic immunity was removed, unpaid parking violations dropped sharply. They conclude that cultural norms and legal enforcement are important determinants of corruption. These results have important implications because

[1] This is the definition used by the international anti-corruption organization Trasparency International, 2009

[2] Based on the country corruption index in Kaufmann, Kraay and Mastruzzi (2005).

it raises the "critical question of whether there are policy interventions that can modify corruption norms over time."

In this paper we show that the results of Fisman and Miguel is strongly driven by factors other than cultural norms. Using the same data as Fisman and Miguel, we show that the parking behavior of UN diplomats can be more consistently explained by differences in quality of government institutions defined by government effectiveness index (in addition to the legal enforcement) rather than country corruption index. Our results suggest that policy makers who are strengthening government institutions by improving the quality of education, pursuing reformist policies which encourages foreign investment and introduce measures which lead to better management of public offices, could have a direct impact on corruption. This finding has important implications for anticorruption reforms which are advocated by World Bank and other foreign aid donors.It is important to keep this in mind before arriving at conclusions from empirical studies, because corruption index could be proxying for other influences like government effectiveness index and ignoring this might lead us to falsely attribute the observed behavior to cultural or social norms of corruption alone.

In our empirical analysis , controlling for the government effective index makes the country corruption index statistically insignificant in *all* of the specifications that are considered in the Fisman and Miguel paper. Moreover, we find that out of the 5 specifications considered in their paper, the coefficient on the country corruption index *reverses* in 4 of them. The coefficient on the government effective index, on the other hand, is positive in 4 specifications and is statistically significant in two specifications. This finding has important policy implications for anticorruption reformers, multilateral institutes like the World Bank and foreign aid donors.

2 Government Effectiveness Index vs. Corruption Index

It is critical to distinguish between the "country corruption index" and the "country government effectiveness index" measured by Kaufmann, Kraay and Mastruzzi (2007).

This distinction affects the conclusion one draws from our empirical study and is critical in understanding corrupt behavior. The country corruption index (or control of corruption index) "measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests."[3] This index primarily measures the frequency with which firms have to make extra payments connected to (i) export/import permits, (ii) public utilities, (iii) tax payments, (iv) awarding of public contracts, (v) getting favorable judicial decisions, (vi) influencing the content of legislations.

The government effectiveness index, on the other hand, measures "the quality of public services, the quality of civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."[4] The key concepts measured here is the (i) quality of civil service, (ii) quality and quantity of public infrastructure (like education, health, roads, transportation), (iii) excessive red tape and (iv) the organizational structure of public offices which is reflected in the ability of the bureaucracy to efficiently (a) manage public expenditures, (b) manage the budget, and (c) mobilize revenues.

It is evident that the scope of government effectiveness index which measures the economic dimension of governance is distinct from the notion of corruption. One paper in which this point comes out clearly is that by Kaufmann (2000) who considers it a myth to treat governance and corruption as one and the same. However, these two indexes may be highly related. One simple reason being that corruption index is perception based, so it is plausible that fast growing countries or developed economies which are either rapidly improving their quality of infrastructure or have a good infrastructure are given better ranking in terms of corruption. Second, the amount of red tape and corruption are highly interrelated as discussed by Banerjee (1997), Bardhan (1997), Guriev (2003), and Bardhan and Mookherjee (2005).

It is important to keep this correlation in mind before arriving at conclusions from

[3] Source?
[4] source?

empirical studies, because corruption index could be proxying for other influences like government effectiveness index and ignoring this might lead us to falsely attribute the observed behavior to cultural or social norms of corruption alone. A similar comment is made by Shliefer (2000) on Wei's paper (2000) which looks at local corruption and global capital flows. Furthermore, distinction between these two indexes is effectively summarized by Triesman (2002) who argues that public officials behavior can be bad in two ways: a) they might do things they are not supposed to do, which is measured by the corruption index and b) they may fail to do things they are supposed to do, which is captured by government effectiveness index (as measured by the quantity and quality of education, healthcare, infrastructure, etc.). This is important for the empirical analysis because the observed bad behavior is in terms of unpaid parking violations of the UN diplomats which reflects the latter - the UN diplomats fail to pay the parking violation fines they are supposed to pay.

The government effectiveness index also measures the organizational structure of public offices; countries which score poorly on government effectiveness have poorly organized public offices. This aspect could also be reflected in country's mission to the UN - the mission itself could be so poorly organized that no one pays attention to the parking ticket violations and no one forces them to comply with the parking law as long as they enjoy diplomatic immunity. This is also highlighted in a statement in NY Times[5] by Manzi Bakuramutsa (a UN diplomat from Rwanda which ranks high in corruption and has poor government effectiveness): "his driver doubles as clerk, that he sometimes sleeps in his office, that he negotiates hard with the utility companies, and that he has taken loans from other countries." But once there was a credible change in legal enforcement where non compliance is severely penalized, it forces the diplomat to alter their behavior with respect to unpaid parking violations. This could be an alternative explanation for the observed parking behavior of UN diplomats from different countries in New York. Therefore, government effectiveness index which is excluded in FM could potentially explain

[5] http://query.nytimes.com/gst/fullpage.html?res=990CEFDF1731F931A15753C1A963958260&sec=&spon=&pagewanted=print

their observed correlation between unpaid parking violations of UN diplomats and control of corruption index: countries with weak government effectiveness tend to be both perceived as more corrupt and also have poorly organized missions. Interestingly, the legal enforcement that took place in 2002 was to give the New York state department permission to revoke the official diplomatic plates of vehicles with three or more "unpaid" parking violations. If the UN diplomats were culturally corrupt and the cost of fines was borne by the country's mission (and not privately by diplomats) then there should have been a decline in unpaid parking violations and an increase in paid parking violations with overall parking violations remaining somewhat same post enforcement. In contrast, the data suggests that there was a dramatic decline in overall parking violations, moreover, there was an approximately 67 percent decline in paid parking violations. However, this is compatible with poorly organized office explanation - strict legal enforcement compels the mission staff to pay attention to parking violations.

In light of the above discussion it becomes imperative that we control for the government effectiveness in our empirical analysis.

3 Empirical Results

We use the count model analysis, similar to Fisman and Miguel, where the dependant variable is the total number of unpaid parking violations by country. In the main econometric specification for the cross-country analysis the dependant variable is Total Unpaid Parking Violations$_{it}$, where i denotes the country and t denotes two time periods, one for the pre-enforcement period and the other for the post-enforcement period. The vector for the explanatory variables is,

$$\beta_1 \text{Corruption}_i + \beta_2 \text{Enforcement}_{it} + \beta_3 \text{Diplomats} + X_i^{'}\gamma, \tag{1}$$

where Corruption is the 1998 country control of corruption (CC) index from Kaufmann, Kraay and Mastruzzi (KKM, 2005); Enforcement is an indicator for the post-October 2002

period, when legal enforcement increased sharply against diplomat parking violators; and X is a vector of other country controls depending on the specification.

We start by validating the results of Fisman and Miguel using the most recent corruption index for 1998 from Kaufmann, Kraay and Mastruzzi (KKM (2007)) which was revised because of the inclusion of new data sources. The revised index is highly correlated (98 percent) with the older index and its inclusion does not alter the key findings of their paper.[6]

Next we include country variables other than the corruption index that could explain the observed behavior. In particular we consider the country government effectiveness (GE) index from KKM (2007). We use the same econometric specification as before, however, now the vector for the explanatory variables is

$$\beta_1 \text{Corruption}_i + \beta_2 \text{Enforcement}_{it} + \beta_3 \text{Diplomats} \\ + \beta_4 \text{Government Effectiveness}_i + X_i^{'}\gamma, \tag{2}$$

where Government Effectiveness$_i$ is the 1998 country government effectiveness index from KKM (2007) and all the other variables are same as in (1).[7] We reverse the sign on the government effectiveness index, higher scores means low levels of government effectiveness.

After controlling for the government effective index in (2) we do not find the country corruption index to be statistically significant in *any* of the specifications considered in the Fisman and Miguel paper. Moreover, we find that out of the 5 specifications considered in the paper, the coefficient on the country corruption index is negative for 4 of them. But the

[6] Regression results are not shown but can be made available upon request from the author.

[7] As explanatory variables we have also looked at other governance indicators in KKM (2007): a) rule of law, b) voice and accountability, c) quality of rule, d) political stability. Similar to the corruption index these indicators are highly correlated with the government effectiveness index. Therefore, ignoring the government effectiveness index might lead us to falsely attribute the observed behavior to any of these indicators alone. Once we control for the government effectiveness index the coefficient on any of these indicators becomes insignificant while the coefficient on government effectiveness index is positive and significant.

We have also looked at regressions in which all governance indicators are considered jointly. The coefficient on the government effectiveness index is positive but insignificant. This perhaps is due to high correlation. Moreover, we use matrix decomposition approach to detect multicollinearity, the test suggests a linear dependence among governance indicators when considered jointly.

coefficient on the government effective index is positive in 4 specifications (negative for one of them, but not significant from zero) and is statistically significant in two specifications.

[*Insert Table* 1 *here*]

We do sensitivity analysis as in Table 4 of the FM paper, but, in addition to the variables considered in the original specifications we include the government effectiveness index. Similar to our previous results we find that the coefficient on corruption index is insignificant in all specifications considered in the paper. In 3 specifications we find this coefficient to be very close to zero and in one specification it is negative. In contrast, we find that the coefficient on the government effectiveness index is positive but insignificant in all specifications.

[*Insert Table* 2 *here*]

We also replicate the results for the unpaid parking violations at the diplomat level (Table 5 in the FM paper). Similar to our previous analysis we include the government effectiveness index in addition to the other variables. We find that in all specifications the coefficient on the corruption index is negative and statistically significant while the coefficient on the government effectiveness index is positive and significant. Also, in contrast to the original finding we do not find evidence that diplomats from low-corruption countries show the most rapid proportional increases in violations over time.

[*Insert Table* 3 *here*]

Our results show that the coefficient estimate on the country corruption index are not robust to the inclusion of the government effectiveness index. This in turn suggests that there are other country level variables other than corruption norms that could explain the results.

3.1 Discussion of the empirical results

It is important to note that inclusion of the government effectiveness index as an explanatory variable leads to a significant change in regression coefficients of the corruption index in nearly all specifications. Also, the coefficient on the government index is positive but insignificant in most of the specifications. One possible explanation for this could be high correlation (0.94) between the government effectiveness index and the corruption index, suggesting the presence of multicollinearity. To address this we calculate the "variance inflation factors (VIF)" and the "condition number" using the matrix decomposition approach. Our results indicate that in all specifications none of the VIFs for the corruption index or the government effectiveness index is greater than 30. Also in nearly all specifications the "condition number" is less than 30 except when we include polynomials of income or regional dummies. Perhaps this could potentially explain why the coefficient on the government effectiveness index changed so dramatically when we included the regional dummies.

Nevertheless, it is also possible that by incorrectly including corruption index which is highly correlated with the government effectiveness index, it leads to the inflation of the variance of the estimator, which perhaps could explain why the coefficient on the government effectiveness index even though it is positive remains insignificant in most specifications. In order to validate this we drop the country corruption index. We use the same econometric specification for the cross country analysis as in FM paper, with the following vector as the explanatory variables

$$\beta_1 \text{Government Effectiveness}_i + \beta_2 \text{Enforcement}_{it} + \beta_3 \text{Diplomats} + X_i^{'}\gamma, \tag{3}$$

where Government Effectiveness$_i$ is the 1998 country government effectiveness index from KKM (2007); Enforcement is an indicator for the post-October 2002 period, when legal enforcement increased sharply against diplomat parking violators; and X is a vector of other country controls depending on the specification.

We find strong effects of government effectiveness, which suggests that diplomats from

countries with weak government institutions, as defined by government effectiveness, accumulated significantly higher unpaid parking violations. Similar to FM results we also find a sharp decline in parking violations in the post enforcement period, implying that legal enforcement matters. Our results are also robust to different functional forms.

[*Insert Table* 4 and 5 *here*][8]

It is interesting to note that dropping of the corruption index does not lead to a significant change in the estimated coefficient on government effectiveness index. However, it drastically reduces the estimated standard errors of the fitted coefficients which makes the estimated coefficients highly significant.

Moreover, we also use the Bayesian Information Criterion (BIC) for model selection. Interestingly we find positive support for the model with only government effectiveness index as compared to models which includes both government effectiveness index and the corruption index in all specifications. We also find positive support for this model (specified in (3)) in nearly all specifications when we compare it with the original FM model (specified in (1)) that does not include the government effectiveness index. In only one specification with regional dummies there is weak support for the original FM model, however, in this case there is the issue of multicollinearity: there are very few observations in some of the dummy variables, for example, the regional dummy for Oceania region has only 4 observations.

Next, we analyze the unpaid parking violations at the diplomatic level and as in previous analysis, we exclude the country corruption index and the interaction term associated with it, and instead include the government effectiveness index and the interaction effect of time spent working in New York with the country government effectiveness index.

[8] Based on the t-statistics one could argue that the coefficient on the government effectiveness index of the model specified in (3) has lesser significance as compared to the corruption index in the original results published by FM. In particular, in some specifications the coefficient on the corruption is significant at 1% level while the coefficient on government effectiveness index is significant at 5% level. However, when we update the FM results by using the latest corruption index, we do not find that the t-statistics of corruption index has a higher level of significance when compared with the coefficient on government effectiveness index from the model specified in (3).

Once again we find the coefficient on the government effectiveness index to be positive and significant suggesting that diplomats from countries with weak government institutions, defined by government effectiveness, accumulated significantly higher unpaid parking violations. We also find that diplomats from countries with strong government institutions show most rapid proportional rise in violations over time.

[*Insert Table* 6 *here*]

4 Conclusions

By separating corruption norms from the quality of government institutions, as defined by government effectiveness, we show that bad behavior of UN diplomats in terms of unpaid parking tickets cannot be robustly related to cultural norms of corruption alone. There are other country level variables measured in government effectiveness[9] like the quality of education, quality of civil service (reduction in red tape), poorly organized mission offices that could also serve as potential explanations for the observed bad behavior of UN diplomats. Given the cross sectional nature of all these tests it is not completely possible to rule out any of these alternative explanations. But our results do show that once we control for the quality of government institutions, as defined by government effectiveness, then cultural norms related to corruption are not persistent in explaining the bad behavior of UN diplomats. Our results however, do suggest that policy makers who are strengthening government institutions by improving the quality of education, pursuing reformist policies which encourages foreign investment and introduce measures which lead to better management of public offices, could have a direct impact on corruption. This finding has important implications for anticorruption reforms which are advocated by World Bank and other foreign aid donors.

[9] For details on the construction of the government effective index and the concept measured please see Kaufmann, Kraay and Mastruzzi (KKM, 2007).

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Table 1: Joint estimation by including the Government Effective index from Kaufman, et al. 2007
Country Characteristics And Unpaid New York City Parking Violations, November 1997 to November 2005

	Dependent Variable: Unpaid Parking Violations					
	(1)	(2)	(3)	(4)	(5)	(6)
Updated Country corruption index 1998, from Kaufmann, et al. 2007	-0.05 (0.44)	-0.05 (0.43)	0.51 (0.38)	-0.44 (0.47)	-0.48 (0.56)	-0.19 (0.50)
Govt effective index 1998, from Kaufmann 2007	0.57 (0.41)	0.57 (0.41)	-0.01 (0.36)	0.85** (0.43)	1.05** (0.52)	0.77* (0.45)
Post enforcement period indicator (post-11/2002)	-4.35*** (0.16)	-4.35*** (0.16)	-4.23*** (0.13)	-4.33*** (0.16)	-4.37*** (0.16)	-4.35*** (0.16)
Updated Country corruption index 2002*post						0.48 (0.47)
Govt effective index 2002*post						-0.62 (0.40)
Updated Country corruption index 1998*post					1.12* (0.65)	
Govt effective index 1998*post					-1.25** (0.63)	
Diplomats	0.05** (0.02)	0.05** (0.02)	0.05*** (0.02)	0.05** (0.02)	0.05** (0.02)	0.04** (0.02)
log per capita income (1998 US$)		-0.00 (0.13)	0.06 (0.14)	85.45** (37.32)	-0.04 (0.13)	-0.02 (0.13)
Africa region indicator variable			2.87*** (0.50)			
Middle East region indicator variable			3.29*** (0.62)			
Europe region indicator variable			2.22*** (0.58)			
Latin America region indicator variable			1.71*** (0.58)			

Table 1 (contd.)

Oceania region indicator variable			1.54**			
			(0.68)			
Asia region indicator variable			2.00***			
			(0.53)			
log per capita income (1998 US$) polynomials (quadratic, cubic, quartic)	No	No	No	Yes	No	No
Observations	298	298	298	298	298	298
Log pseudo likelihood	-1569.03	-1569.03	-1548.67	-1564.05	-1566.65	-1568.16

Note: Negative Binomial regressions. White robust standard errors are in parentheses. Disturbance terms are clustered by country (there are two observations per country: pre enforcement and post enforcement). The omitted region is North America/Caribbean.
* Statistically significantly different from zero at 90 percent confidence.
** Statistically significantly different from zero at 95 percent confidence.
*** Statistically significantly different from zero at 99 percent confidence.

Table 2: Joint estimation by including the Government Effective index from Kaufman, et al. 2007
Country Characteristics Unpaid New York City Parking Violations, November 1997 to November 2005:
Sensitivity Tests

	Unpaid Parking Violations Negative Binomial	Unpaid Parking Violations Negative Binomial	Paid and Unpaid Parking Violations Negative Binomial	After-Hours Parking Violations Negative Binomial	Log(1+ Unpaid Parking Violations) OLS	Unpaid Parking Violations OLS	Unpaid Parking Violations Negative Binomial
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Updated corruption index 1998, from Kaufmann, et al. 2007	0.77	-0.04	0.02	0.08	0.15	-336.34	0.26
	(0.67)	(0.41)	(0.40)	(0.45)	(0.35)	(336.60)	(0.45)
Govt effective index 1998, from Kaufmann, , et al. 2007	0.19	0.48	0.47	0.55	0.22	570.02	0.40
	(0.60)	(0.39)	(0.40)	(0.38)	(0.38)	(447.26)	(0.43)
Diplomats	0.05**	0.01	0.05***	0.04*		22.42**	0.04
	(0.03)	(0.02)	(0.02)	(0.02)		(11.09)	(0.03)
Post enforcement period indicator (post-11/2002)	-4.11***	-4.29***	-3.33***	-3.55***	-2.69***	-966.60***	-4.32***
	(0.14)	(0.17)	(0.13)	(0.20)	(0.14)	(164.86)	(0.16)
log per capita income (1998 US$)	0.31	-0.03	0.04	0.01	-0.24**	13.42	0.00
	(0.20)	(0.14)	(0.12)	(0.16)	(0.11)	(105.85)	(0.16)
Average government wage / country per capita income	0.16***						
	(0.06)						
Log diplomats					0.77***		
					(0.16)		
Diplomatic Vehicles		0.04*					
		(0.02)					

Table 2 (contd.)

Log weighted distance of population from United States							1.22*** (0.28)
Log total trade with the United States							0.05 (0.06)
Received U.S. Economic aid							-0.51 (0.32)
Received U.S. military aid							0.27 (0.23)
Observations	184	278	298	298	298	298	288
Log pseudo likelihood	-968.39	-1463.12	-1814.96	-829.97	..	..	-1511.51
R-squared	..	..	..	..	0.51	0.14	..

Note: White robust standard errors are in parentheses. Disturbances are clustered by country.
* Statistically significantly different from zero at 90 percent confidence.
** Statistically significantly different from zero at 95 percent confidence.
*** Statistically significantly different from zero at 99 percent confidence.

Table 3: Joint estimation by including the Government Effective index from Kaufman, et al. 2007
Unpaid Parking Violations at the Diplomat Level, November 1997 to November 2005

	Dependent Variable: Unpaid Parking Violations (Monthly)	
	Negative Binomial (1)	Negative Binomial (2)
Updated corruption measure for 1998, from Kaufmann, et al. 2007	-1.01***	-1.10***
	(0.28)	(0.29)
Govt effective measure for 1998, from Kaufmann, et al. 2007	1.15***	1.51***
	(0.30)	(0.33)
Months in New York City	0.08***	0.09***
	(0.00)	(0.00)
Months in New York City * country corruption index		0.01
		(0.01)
Months in New York City * country govt effectiveness index		-0.03***
		(0.01)
Month fixed effects	Yes	Yes
Observations (diplomats)	40938	40938
	(5,338)	(5,338)
Log pseudo likelihood	-23,469	-23,375

Note: White robust standard errors are in parentheses. Disturbance terms are clustered by country. Observations are clustered at the diplomat-month level. Month fixed effects are included in all regressions (thus the post enforcement indicator is not included. The log per capita income (1998 US$) term is included in controls in cols 1-2 (results not shown).
* Statistically significantly different from zero at 90 percent confidence.
** Statistically significantly different from zero at 95 percent confidence.
*** Statistically significantly different from zero at 99 percent confidence.

Table 4: Government Effective index from Kaufman, et al. 2007
Country Characteristics And Unpaid New York City Parking Violations, November 1997 to November 2005

	Dependent Variable: Unpaid Parking Violations					
	(1)	(2)	(3)	(4)	(5)	(6)
Govt effective index 1998, from Kaufmann, et al. 2007	0.53***	0.54**	0.41**	0.57**	0.66***	0.64***
	(0.13)	(0.21)	(0.18)	(0.23)	(0.23)	(0.23)
Post enforcement period indicator (post-11/2002)	-4.35***	-4.35***	-4.21***	-4.37***	-4.34***	-4.34***
	(0.19)	(0.18)	(0.14)	(0.17)	(0.18)	(0.18)
Diplomats	0.05**	0.05**	0.05***	0.05**	0.05**	0.05**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
log per capita income (1998 US$)		0.01	-0.02	78.41**	0.01	0.01
		(0.15)	(0.14)	(36.63)	(0.15)	(0.15)
Govt effective index 2002*post						-0.18
						(0.15)
Govt effective index 1998*post					-0.19	
					(0.15)	
Africa region indicator variable			2.86***			
			(0.47)			
Middle East region indicator variable			3.18***			
			(0.58)			
Europe region indicator variable			2.32***			
			(0.56)			
Latin America region indicator variable			1.82***			
			(0.54)			
Oceania region indicator variable			1.53**			
			(0.68)			
Asia region indicator variable			2.06***			
			(0.51)			

Table 4 (contd.)

Log per capita income (1998 US$) polynomials (quadratic, cubic, quadratic)	No	No	No	Yes	No	No
Observations	298	298	298	298	298	298
Log pseudo likelihood	-1569.03	-1569.05	-1549.87	-1564.80	-1568.69	-1568.70

Note: Negative Binomial regressions. White robust standard errors are in parentheses. Disturbance terms are clustered by country (there are two observations per country: pre enforcement and post enforcement). The omitted region is North America/Caribbean.
* Statistically significantly different from zero at 90 percent confidence.
** Statistically significantly different from zero at 95 percent confidence.
*** Statistically significantly different from zero at 99 percent confidence.

Table 5: Government Effective index from Kaufman, et al. 2007
Country Characteristics And Unpaid New York City Parking Violations, November 1997 to November 2005:
Sensitivity Tests

	Dependent Variable						
	Unpaid Parking Violations Negative Binomial (1)	Unpaid Parking Violations Negative Binomial (2)	Paid and Unpaid Parking Violations Negative Binomial (3)	After-Hours Parking Violations Negative Binomial (4)	Log(1+ Unpaid Parking Violations) OLS (5)	Unpaid Parking Violations OLS (6)	Unpaid Parking Violations Negative Binomial (7)
Govt effective index 1998, from Kaufmann, et al. 2007	0.84***	0.45**	0.48**	0.61**	0.36*	267.51	0.58***
	(0.26)	(0.22)	(0.19)	(0.24)	(0.19)	(176.40)	(0.22)
Post enforcement period indicator (post-11/2002)	-4.10***	-4.29***	-3.33***	-3.55***	-2.69***	-966.60***	-4.30***
	(0.13)	(0.18)	(0.14)	(0.20)	(0.14)	(164.57)	(0.18)
Diplomats	0.05**	0.01	0.05***	0.04*		21.37*	0.04*
	(0.02)	(0.02)	(0.02)	(0.02)		(11.31)	(0.03)
log per capita income (1998 US$)	0.22	-0.02	0.03	-0.00	-0.25**	32.70	-0.04
	(0.18)	(0.15)	(0.14)	(0.13)	(0.11)	(123.70)	(0.17)
Average government wage / country per capita income	0.14**						
	(0.06)						
Diplomatic Vehicles		0.04*					
		(0.02)					
Log diplomats					0.78***		
					(0.16)		
Log weighted distance of population from United States							1.18***
							(0.28)
Log total trade with the United States							0.06
							(0.06)

Table 5 (contd.)

Received U.S. Economic aid							-0.45
							(0.29)
Received U.S. military aid							0.29
							(0.23)
Observations	184	278	298	298	298	298	288
Log pseudo likelihood	-969.31	-1463.63	-1814.96	-830	..	..	-1511.80
R-squared	..	..	..	..	0.51	0.14	..

Note: White robust standard errors are in parentheses. Disturbances are clustered by country.
* Statistically significantly different from zero at 90 percent confidence.
** Statistically significantly different from zero at 95 percent confidence.
*** Statistically significantly different from zero at 99 percent confidence.

Table 6: Government Effective index from Kaufman, et al. 2007
Unpaid Parking Violations at the Diplomat Level, November 1997 to November 2005

	Dependent Variable: Unpaid Parking Violations (Monthly)	
	Negative Binomial (1)	Negative Binomial (2)
Govt effective index for 1998, from Kaufmann, et al. 2007	0.46***	0.73***
	(0.16)	(0.18)
Months in New York City	0.08***	0.09***
	(0.00)	(0.01)
Months in New York City * Govt effective index		-0.02***
		(0.01)
Month fixed effects	Yes	Yes
Observations (diplomats)	40938 (5,338)	40938 (5,338)
Log pseudo likelihood	-23,626	-23,538

Note: White robust standard errors are in parentheses. Disturbance terms are clustered by country. Observations are clustered at the diplomat-month level. Month fixed effects are included in all regressions (thus the post enforcement indicator is not included. The log per capita income (1998 US$) term is included in controls in cols 1-2 (results not shown).
* Statistically significantly different from zero at 90 percent confidence.
** Statistically significantly different from zero at 95 percent confidence.
*** Statistically significantly different from zero at 99 percent confidence.