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Ethics by Design: The Impact of Form of Government on Municipal Corruption

Research Article

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Abstract: *While trust in government at all levels is at an all-time low, actual corruption at the municipal level has been declining. One factor often credited with this decline is the introduction of the council-manager form of government. One of the key reasons the council-manager form was created in the early 1900s was to act as an antidote to the corruption prevalent in the big-city machine politics of the era. Despite this, no one has tested whether the council-manager form has in fact influenced the decline in corruption rates. This article uses a rare events logit model to analyze corruption convictions in municipalities between 1990 and 2010 to determine which factors, including form of government, affect the probability that a corrupt act will occur. The findings indicate that municipalities with the council-manager form are 57 percent less likely to have corruption convictions than municipalities with the mayor-council form.*

Evidence for Practice

- The council-manager form of government lessens the likelihood of government corruption in municipalities.
- A change in form of government, either to or from the council-manager form, increases neither the risk of corruption nor the likelihood of uncovering corruption that leads to a conviction.
- Having a mayor elected at-large is found to reduce the risk of corruption.

Trust in government is at an all-time low. In 2016, only 42 percent of Americans polled said they trusted their political leaders, down more than 20 percentage points since 2004 (Jones 2016). It is not surprising given the dramatic and disturbing headlines of mayors arrested for accepting bribes, municipal staff embezzlements, and managers accepting gifts to approve contracts. Despite the shocking nature of such cases, however, they are not common events within U.S. municipal government. There is no evidence that supports an increase in the rate of public corruption over time (Glaeser and Saks 2006). In fact, corruption decreased over the past century. In the 1800s and early 1900s, corruption was rampant in American cities, with the levels of election fraud and graft reaching their peaks in the 1870s. In the decades since, however, these levels have dropped sharply, such that the level of municipal corruption in the 1870s is estimated to be five times higher than levels in the 1970s (Glaeser and Goldin 2004).

One factor often credited with this decline in corruption is the reform of local government and the introduction of the council-manager form of municipal government in 1908.[1] In the council-manager form, an elected body consisting of a mayor and council have unified executive and legislative powers and appoint a professional manager to run the day-to-day operations of the government. The development of the council-manager form was arguably one of the greatest innovations in local government in the United States. Use of the council-manager form, today by more than half of all municipal governments with populations over 2,500, has transformed the way these municipalities operate.[2] One of the key reasons the council-manager form was developed was to act as an antidote to the corruption prevalent in the machine politics of the era. *Public Administration Review* recognized the significance of the creation of the council-manager form by highlighting research on the form during its centennial. And yet no one has tested whether the use of the council-manager form has been able to influence corruption rates in local governments.

Other factors may have contributed to corruption declines, including more laws and harsher penalties for public corruption, increasing media scrutiny of local governments, and greater oversight by state and federal governments (Glaeser and Goldin 2004). Are these other factors in fact responsible for the change in corruption levels, or has the increasing use of the council-manager form been a part of this reduction? There are two lines of reasoning that can be used to

understand how form of government might affect corruption. The first is that professional managers are best able to install internal controls and other administrative mechanisms to limit opportunity for corruption (Lyman, Fletcher, and Gardiner 1978). The second is that certain political incentives that characterize the mayor-council form do not pertain to the council-manager form (Feiock, Jeong, and Kim 2003).

For this study, a data set of corruption convictions occurring in municipalities between 1990 and 2010 was created to determine which factors, including form of government, affect the probability that a corrupt act will occur. It uses federal data on prosecutions for public corruption for all cities with populations of at least 10,000 as of the 2010 U.S. Census. The data are analyzed using a rare events logit to model what factors influence the likelihood of corruption charges being filed. The findings indicate that form of government has a large effect on the risk of municipal corruption. It is estimated that cities with the council-manager form are 57 percent less likely to have corruption charges filed against them than are those with the mayor-council form. Higher rates of poverty also were found to be significantly related to a greater risk of corruption. Interestingly, the mayor's selection by at-large election is found to reduce the risk of corruption. This finding is not in keeping with expectations.

Extensive gaps are evident in the literature on public corruption in American cities. Research done at the municipal level has not empirically explored the factors related to a city's risk of becoming the victim of a corrupt act. One stream of research investigates how well corruption-control efforts work or suggests methods for preventing corruption. An especially influential piece in this vein makes the argument that corruption controls instituted in New York City have resulted in less effective government (Anechiarico and Jacobs 1996). Another stream of research in the literature instructs cities on how to improve their corruption-control systems (Gardiner and Lyman 1978; Klitgaard, Maclean-Abaroa, and Parris 1999). Most commonly, authors develop a snapshot of corruption by creating case studies of a single city's corruption experience and drawing conclusions based on that one case (Jurkiewicz 2007; McGrath 2013; Merriner 2004).

Given the attention that has been paid to corruption in developing countries, it is not surprising that the bulk of corruption research is international in scope, with nations serving as the primary unit of analysis (Rose-Ackerman 1999; Tanzi 1998; Treisman 2000). Many of these studies focus on developing nations that struggle to maintain a stable government (Fisman and Gatti 2002; Mo 2001; Olken and Pande 2012). In addition, most international studies use methods that are not sufficient for evaluating corruption risk because they are based primarily on data from perceptional surveys (does the respondent perceive that the government is corrupt) rather than data on the rate of corrupt acts. While valuable, this research does little to help understand corruption in U.S. local governments, in part because local and national governments do not have equivalent operations. For example, the U.S. federal government operates with divided government, while more than half of American cities have a unified government. Another common stream of comparative research involves anticorruption efforts (Brinkerhoff 2000; Graycar and Prenzler 2013; Zhang and Lavena 2015). Graycar and Prenzler (2013) examine corruption in

wealthy countries (including the United States) and offer methods for preventing corruption in criminal justice, procurement, public health, and urban planning, but they do not test whether the implementation of their recommendations are effective corruption preventatives.

Domestically, much of the literature focuses on states (Glaeser and Saks 2006; Liu and Mikesell 2014; Meier and Holbrook 1992). This research is useful for providing insights into the kinds of variables that could be included in a model for municipal corruption. However, there are significant differences between states and municipal governments. States are structured more like the federal government, with divided executive and legislative powers, while more than half of municipalities use the unified council-manager form. Given that the central objective of this research is to determine whether form of government influences corruption, this is a key difference.

Using empirical methods to study municipal corruption in the United States is challenging. States do not necessarily distinguish between corrupt acts that occur in the public versus the private sector. Small acts of corruption, such as embezzlements of hundreds of dollars or less, are not publicly reported. The sheer number of municipal governments makes a comprehensive U.S. analysis difficult because much of the data on municipal governments are not available in database form and so must be culled from individual documents, a task made more difficult by the fact that demographic and fiscal data at the municipal level are not as robust as at the county level. These challenges may be one reason for the near absence in the literature of comprehensive studies of municipal corruption.

This research seeks to fill some of those gaps in the literature by using a comprehensive longitudinal data set. This article begins with a discussion of the literature on public corruption and then provides the theoretical framework for the analysis of municipal corruption and the hypotheses. After detailing the research methodology and presenting the findings from the analysis, the article concludes with implications for local governments and directions for future research.

Public Corruption: An Overview of the Literature

While everyone has a conception of public corruption, there is no universally applied definition. Both domestically and internationally, the definition will differ depending on such situational factors as political and social culture as well as the degree of severity of the offense. Some view public corruption as a more complex concept in that it includes activities that may not be illegal but are nonetheless deemed improper, such as nepotism (Graycar and Prenzler 2013). For example, nepotism is legal in Illinois municipalities unless banned by local ordinance, but it is illegal in Montana. This study defines public corruption as occurring when a government official or employee engages in illegal activities related to his or her job or office to achieve personal gain. This definition captures criminal acts, including bribery (whether cash, gifts, or services), theft or embezzlement, and "pay to play," which typically involves campaign contributions in exchange for favors. Forms of corruption that may fit the definition but are unlikely to lead to arrests, such as conflict of interest and nepotism, are omitted from this analysis.

Previous research has measured corruption in multiple ways. As noted before, many international studies measure corruption using surveys that center around perceptions of corruption (Kim 2010; Salminen and Ikola-Norrbacka 2010; Villoria, Van Ryzin, and Lavena 2013). The most often used measure for perception of corruption is the Corruption Perceptions Index (CPI). Produced annually since 1995 by Transparency International, the CPI aggregates data from a set of surveys taken in different countries. These surveys range from those of relatively small groups of businesspeople and experts in corruption to surveys of citizens to develop a measure of perceived level of corruption in government, with country as the unit of analysis. For a country to be included in the CPI, it must have three sources of survey data. Some scholars argue that the CPI is methodologically problematic, the primary critique being that many of the data sources are business leaders and experts from countries in the index, small groups who share similar perspectives on corruption (deMaria 2008; Knack 2006). A second criticism is that perception of corruption is not equivalent to actual corruption (Andersson and Heywood 2009; de Maria 2008). There are others, though, who do support the use of the index as a valid measure of international corruption (Saisana and Saltelli 2012; Wilhelm 2002).

Scholars examining corruption in U.S. states have used methods similar to those of the CPI. Some have created surveys of statehouse reporters (Alt and Lassen 2003; Boylan and Long 2003). Others have used the number of convictions, either over a given period or in a single year, or the ratio of convicted officials to total officials (Alt and Lassen 2008; Goel and Nelson 1998; Meier and Holbrook 1992). Typically, the data on arrests and convictions used in corruption research at all levels come from federal annual reports produced by the Public Integrity Section (PIN) of the U.S. Department of Justice. Other studies conduct comprehensive searches of newspaper articles published in the U.S. to gather data on corruption arrests and convictions (Glaeser and Goldin 2004). This study uses PIN data, legal cases reported in Westlaw, and data on convictions for public corruption collected through newspaper searches.

Factors Associated with Public Corruption

Perhaps the most frequently examined factor for its association with corruption is poverty. Internationally, poverty and/or low levels of economic development are correlated with a greater prevalence of corruption (Lui 1996; Treisman 2000). Further complicating the relationship of poverty to corruption, researchers have also found that corruption itself indirectly increases poverty (Gupta, Davoodi, and Alonso-Terme 1998; Mauro 2006). One state-level study determined that levels of median household income and education also affect the incidence of public corruption (Glaeser and Saks 2006). Anecdotally, America's low-income cities are often the victims of public corruption. Detroit, Michigan; Camden, New Jersey; and East St. Louis, Illinois, have all had to address recurrent incidents of corruption. And yet, despite the anecdotal evidence, an empirical connection has yet to be made between corruption in *local* government and poverty.

One of the most cited U.S. studies on state corruption was conducted by Kenneth Meier and Thomas Holbrook (1992). A similar study, also on state governments, was conducted by James

Alt and David Lassen (2003). These are the most comprehensive U.S. studies of contributors to corruption. Meier and Holbrook's research sought to establish factors related to state corruption. Alt and Lassen sought to understand how institutions affect corruption at the state level while controlling for variables found to be significant contributors to corruption in earlier research. Meier and Holbrook's dependent variable is the number of public officials convicted of public corruption crimes in each state. They used those data to determine whether historical/cultural, political, structural, or bureaucratic factors explain corruption. They began with the premise that "corruption exists because individuals perceive that there are benefits to corruption and the costs are relatively low compared to the benefits" (Meier and Holbrook 1992, 138).

For each of the four categories of explanatory variables, Meier and Holbrook found mixed support. Historical/cultural variables that were significantly related to corruption included a positive relationship with the percentage of the population living in urban areas and negative associations with the percentage of the population with college degrees (a finding confirmed by Glaeser and Saks 2006) and the percentage of the population that identifies their ancestral group as Italian or Irish. Crime rate was not associated with corruption.

Meier and Holbrook also argue that states can set up their political systems in ways that increase the likelihood that a corrupt official will be caught, increasing the costs of corruption. To test this hypothesis, they use four indicators, only one of which was significant. The degree of partisan competition in elections, the extent of the appointive power of the government, and political ideology were not significantly related to corruption. However, election turnout was negatively related to corruption.

The third set of variables investigated whether structural reforms intended to make the government more transparent successfully increased the risk of being caught (cost of corruption) and whether this influenced the number of corruption convictions. The Meier and Holbrook analysis found no support for this hypothesis. Some of the variables they considered were number of special districts as a percentage of all government units, increased auditing capacity, and direct democracy methods. Alt and Lassen, meanwhile, did find a negative association between direct initiatives and public corruption as well as for campaign financing restrictions.

The final category of contributors to corruption that Meier and Holbrook investigated is bureaucratic explanations. All public employees are susceptible to corruption when the opportunity arises, according to these authors, who theorize that as size of government increases, the potential rewards/benefits of corruption increase. A second part of this hypothesis is that underpaid workers are more likely to be corrupt. To test this hypothesis, they use size of the bureaucracy (total government employment and budget per employee) and level of bureaucratic salary. Meier and Holbrook found size of bureaucracy to be positively associated with corruption. Those findings are confirmed by both Goel and Nelson (1998) and Alt and Lassen (2003); however, Glaeser and Saks (2006) found no correlation between corruption and size of government.

Explanations for Why Corruption Occurs

Explanations for the occurrence of corruption in the public sector essentially fall into two categories: those that examine why individuals commit corrupt acts and those that explore organizational characteristics that may lead to a greater probability of corrupt acts. Theories of individual corruption are based on principal-agent models. Overall, an individual faces a decision about whether to commit a corrupt act based on the opportunity to act in a corrupt way, the incentives for engaging in the corrupt act, and the risk of getting caught and the penalties associated with it. This is not to say that an individual's personal morality or commitment to ethics and honesty will not also play into the probability that he or she will commit a corrupt act (Lyman, Fletcher, Gardiner 1978). Ultimately, though, the individual makes a bounded-rational choice to engage in unethical activity in order to maximize his or her own personal utility (de Graaf 2007). The decision is rational in the sense that the individual perceives that the benefits of the corrupt act outweigh the costs. This cost/benefit framework is the most prevalent perspective in the literature on the explanation for why individuals may become corrupt (Becker 1968; Goel and Nelson 1998; Meier and Holbrook 1992; Rose-Ackerman 1978). According to this theoretical perspective, the risk of corruption can be reduced by decreasing the amount of individual discretionary authority (limited agency, reduced opportunity, internal controls) and imposing greater accountability (increasing the probability of getting caught).

Another model used to explain individual acts of corruption is the institutional choice framework (Collier 2002). While this framework also involves individual factors, it cites social and organizational factors as contributors to corruption as well. Institutional choice theory posits that individual behavior is bounded by social institutions. Therefore, according to this view, anticorruption efforts must include greater efforts to build social trust and more egalitarian political cultures (Collier 2002).

Given that not everyone in the organization commits corrupt acts, the organization itself cannot truly be said to cause corruption. However, factors associated with the culture or structure of an organization can provide individuals with incentives to either commit a corrupt act (political incentives) or to refrain from doing so (administrative incentives). The types of incentives differ according to the form of government. Both political and administrative incentives are inherent in public sector organizations. Political incentives are related to the electoral process and therefore are more commonly found in the mayor-council form than in the council-manager form. Administrative incentives to manage an organization in the best ways possible are based in the values of public administration—efficiency, effectiveness, and equity.

Because mayors and council members seek to be reelected, elected officials are open to the opportunity to be bribed or otherwise influenced through such inducements as campaign contributions. In the mayor-council form of government, these electoral incentives drive opportunistic behavior (Feiock, Jeong, and Kim 2003). James Q. Wilson (1966) argued for a political explanation, positing that public corruption in the U.S. system, with its checks and balances and divided government, depends on the informal trading of favors among governmental actors. If the independent power of the mayor

and council members is removed, nothing is to be gained by bribing elected officials. Inasmuch as individual council members, in either form of government, are not able to act independently, they are less susceptible to corrupting incentives than is a mayor who operates independently of council.

A complementary framework posits that incentives are both high-powered and low-powered in terms of their potential impacts (Frant 1996). High-powered incentives are those resulting from the electoral political process. Candidates for reelection naturally tend to be responsive to the wishes of their constituents. However, such engagement can lead to individual corrupt transactions, such as receiving a bribe to cast a favorable vote.

Low-powered incentives exist in all public organizations because employees receive no direct personal gain from the activities of their organizations other than their salaries. So, for example, if a public organization significantly reduces costs, those savings are not passed onto the employees. Management-level employees are rewarded for improving organizational performance and efficiency by retaining their jobs and potentially earning promotions. In this case, the best interests of the organization are consistent with the interests of the employee, Low-powered incentives are thus less conducive to corruption because organizations that become victims of corruption are necessarily less efficient.

Given that mayors have independent discretion in mayor-council governments and not in council-manager governments, one could argue that high-powered incentives are greater in the mayor-council form and that low-power incentives pertain more to the council-manager form. While mayoral performance in running a municipality can increase the incumbent's ability to be reelected, the same can be said for all forms of government. The important distinction between the council-manager and the mayor-council form of government is that mayors running for reelection in the mayor-council form are able to make individual choices that mayors in the council-manager form are not permitted to make, regardless of how the mayor is selected. The manager in a council-manager government can make the same decisions as a mayor in a mayor-council government but is not susceptible to the higher power incentive of seeking out donations and currying influence because managers do not run for their positions through the electoral process. Howard Frant (1996) argues that the council-manager form is based on low-powered incentives given that the chief executive function is assigned to a manager appointed by the council.

The manager is motivated by administrative incentives to run the organization efficiently and effectively. Such incentives lead to a greater likelihood that practices within the organization will provide protection from corrupt acts by staff. Although this does not preclude the possibility that a manager will commit a corrupt act, the connection between money and job retention is not nearly as great for a manager as for a mayor. Another consideration when distinguishing managers from mayors is that managers who are members of the International City/County Management Association (ICMA) swear adherence to the ICMA Code of Ethics. The ICMA enforces violations of the code of ethics, leading to potential punishments that include a lifetime ban from the organization.

An organization run by a professional manager is also likely to have improved internal controls and a well-trained staff (Rich and Zhang 2014). Unlike elected officials, who are able to exchange influence for campaign contributions, favors, or other types of bribes, staff who engage in corrupt acts are most likely to embezzle funds from the government. In these cases, the individual sees the gains as being worth the risk. Hiring well-qualified staff and instituting proper internal controls—cash-handling procedures, check-writing authorization, and so on—are keys to preventing corrupt actions. A manager who is professionally trained in human resources and financial management would likely be better able to institute professional hiring practices and internal controls than a mayor with no training in these areas.

Reforming Municipal Government

During the Progressive Era, political influence over the local governance system was endemic, as reflected by the proliferation in cities of political machines associated with corruption, fraud, and mismanagement. In 1912, Richard Henry Dana, then chair of the Council of the Civil Service Reform League, wrote that there were "internal diseases connected with municipal government in America" and that an "anti-toxin" was needed in the form of professional government (Dana 1912, 33). As previously noted, a key rationale given for the creation of the council-manager form was the insulation it provided against political influence and its associated corruption.

More than a century has passed since the creation of the council-manager form, yet no empirical evidence has been reported on whether the adoption of the form provides some level of protection from corrupt acts. Today, the majority of U.S. municipalities use the council-manager form (59 percent of respondents to the ICMA 2010 form of government survey), and many others employ a chief administrative officer to help run daily operations, an important element of this form of government.

Explaining how the council-manager form could reduce the risk of corruption involves the consideration of both the individual and the organization. Administratively, professional managers should be educated and have experience in financial reporting, auditing, and internal controls. Such training makes them better able to assess candidates for hiring and increases the likelihood of their being able to institute a series of internal controls for greater oversight and transparency. These safeguards heighten the risk of getting caught engaging in a corrupt act, thus making the cost–benefit analysis for corruption potentially less favorable in a council-manager organization. Second, given that the administrative system is somewhat removed from the political system in council-manager governments, high-powered incentives are reduced, and individual elected officials have less discretion to act independently in ways that provide more opportunities for graft.

Hypotheses

As detailed earlier, the council-manager plan was developed expressly to reduce corruption in local government. Conceptually, hiring a professional manager who is trained to implement protections against embezzlement and other unethical acts and whose job depends on performance rather than an election should provide some protection against corrupt acts. Thus, the first hypothesis:

> **Hypothesis 1**: The council-manager form of government is associated with a lower risk of corruption convictions than the mayor-council form.

When the early twentieth-century political reformer Richard S. Childs articulated his recommendations for implementing the council-manager form, he endorsed a mayor selected from and by the elected council. This method was intended to reduce the independent authority of the mayor. However, many council-manager cities retain a mayor who is selected at-large by the council. A mayor who is elected at-large, in any form of government, will seek campaign contributions and will be perceived as having independent authority. This means that a directly elected mayor is more likely to experience political incentives for corruption, thereby leading to the second hypothesis:

> **Hypothesis 2**: A municipality with a mayor elected at-large is associated with a higher risk of public corruption convictions.

The relationship between poverty or income and corruption has been established in other studies of federal and state corruption (Lui 1996; Glaeser and Saks 2006; Treisman 2000); however, this relationship has not been tested at the local level. For this reason, the following three hypotheses test measures of a community's economic health:

> **Hypothesis 3**: Higher rates of poverty are associated with a higher risk of public corruption convictions.

> **Hypothesis 4**: Higher unemployment rates are associated with a higher risk of public corruption convictions.

> **Hypothesis 5**: Education (percent without high school diploma) is associated with a higher risk of public corruption convictions.

Prior research at the national level has found that population size is associated with greater risk of public corruption (Mocan 2008; Xin and Rudel 2004). Studies focusing on U.S. states have found that the size of the government is related to a greater probability of corruption (Alt and Lassen 2003; Goel and Nelson 1998; Meier and Holbrook 1992). For both categories of studies, the authors suggest that more populous nations and larger governments offer more spoils (greater benefits) for corrupt acts. This leads to the final hypothesis:

> **Hypothesis 6**: Greater population size is associated with a higher risk of public corruption convictions.

Data and Methodology

Studying public corruption in municipalities is difficult. Since many states do not have laws that distinguish public corrupt acts from those in the private sector, there is no way to gather data on state convictions nationally other than through newspaper archives. For the dependent variable, this study uses several sources of data. Although many cases of corruption involve corrupt acts that span numerous years, this research uses the year of arrest or indictment because it is sometimes difficult for prosecutors to pinpoint the precise year that corruption began. For this study, cases of police corruption were excluded because the study focuses on the

activities of staff and elected officials inside city hall. Cases that are prosecuted by federal attorneys are classified into categories by the U.S. attorneys in their federal districts. One category is "official corruption." Each year a summary report is prepared for Congress by the Public Integrity Section of the U.S. Department of Justice. This research uses reports from 1990 through 2010 to cull data on public corruption cases. Police corruption is excluded from the data set, which focuses instead on crimes committed by elected officials, managers, and staff in the municipal government.

Although PIN data have been widely used in earlier studies, some charge that the data are suspect because they come from retrospective surveys of federal prosecutors rather than from administrative data itself. Adriana Cordis and Jeffrey Milyo (2016) compared PIN data with the more comprehensive administrative records and found that the primary inconsistencies related to the number of convictions reported in the two types of data.

To address purported weaknesses in the PIN data, this study sought out three additional sources of data. One promising source was the Transactional Records Access Clearinghouse (TRAC), which contains data obtained from the federal government on government spending, staffing, and enforcement (including date on corruption). Unfortunately, identifiers for these cases (except for the state) have been removed. An attempt to cross-check the TRAC cases with the Public Access to Court Eletronic Records (PACER) system was unsuccessful. Westlaw was then employed to obtain records of cases that were potentially missed by the PIN data. Westlaw was searched for any municipal cases spanning 1990 through 2010 that included violations for crimes of interest.[3] Another search was conducted of news articles on municipal corruption using two databases (America's News and LexisNexis). Nearly all cases from the PIN and Westlaw searches were also found in the news searches.

According to this research, most cases of municipal corruption are prosecuted by the federal government. This is consistent with Cordis and Milyo's finding (2016) that approximately 94 percent of all public corruption cases are handled by federal authorities. The current study compiled 146 corruption cases that resulted in convictions during the 1990–2010 time period; only 7 were prosecuted by state government. Some of the 118 cases that had a positive value for corruption had multiple defendants and led to multiple court cases. If the same corruption incident was involved, the case was recorded only once. The data likely include most major cases of corruption that led to conviction during the period of interest, but it is also probable that a considerable number of corruption cases likely did not lead to arrest or indictment.

Data on form of government, change in form of government, and mayoral election method were drawn from a data set created and maintained by one of the authors. The data set contains information on form of government over time (1990–2010) as well as other institutional variables, such as how council members are selected, for all municipal governments with a population of at least 10,000 as of the 2010 U.S. Census. The total number of municipalities in the original form of government data set is 3,452 (which includes all forms of government).[4] This study was limited to the council-manager and mayor-council forms of government (n = 2,759); of that number, 59 percent are council-manager municipalities.

Data for population, poverty rate, and education (percentage without high school diplomas) were gathered from the U.S. Census and annual census estimates. Population density was drawn from the U.S. Census, but it was extrapolated in nondecennial years by using the land area from 1990 (for 1991–99), 2000 (for 2001–09), or 2010. Unemployment data came from the Bureau of Labor Statistics. For municipalities under 25,000, the metropolitan statistical area unemployment rate was used due to nonreporting of municipal-area unemployment rate.

The model also controls for the state for each municipality. It is possible that state oversight and differing laws regarding municipal governments could influence the probability that corruption may occur. For example, although most states require that an external annual audit be conducted by municipalities and submitted to the state government, only rarely do state governments analyze them. New York State's comptroller periodically conducts its own audits of local governments. In Missouri, residents can petition the state auditor's office to audit a municipality. For example, the citizens of Joplin, the site of one of the deadliest tornadoes in U.S. history in 2011, petitioned the state auditor's office to investigate possible issues that may have occurred in the rebuilding process. The auditor found financial mismanagement, including millions of dollars of funds disbursed for reconstruction that never took place.

This analysis uses longitudinal municipal data of all municipalities in the United States with populations greater than 10,000 over the period 1990–2010. To test the hypotheses of whether form of government and related variables affect whether charges were filed within a municipality, a series of models were run to estimate the relationships. The dependent variable is binary, coded 0 if there was no corruption conviction and 1 if there was a corruption conviction, so logit models are most appropriate. However, since very few instances of corruption took place during the period of study, the modeling is slightly more complicated. In fact, out of the 60,531 observations within the data, only 145 of them have a positive value for the dependent variable, corruption. This is a mere 0.24 percent of observations. A traditional logit with fixed effects was performed but was followed by the more appropriate rare events model—in this case, a penalized maximum likelihood regression. Rare events data present two important computational problems: first, the coefficients are biased; second, the probabilities of events occurring are inferior estimates and consistently underestimate the probability of the event occurring.[5]

Rare events bias logit coefficients because of the density of zeros versus the density of ones. The density of zeros will be better estimated because of the density of observations, whereas the density of ones will not be better estimated because these events are so rare that essentially no information exists on how to compute the density of the occurrence. This will lead to biased estimates and the probability of zero being overestimated and the probability of one being underestimated. The rare events model used here, the penalized maximum likelihood regression, uses the methodology suggested by David Firth (1993), which has since become the standard approach when analyzing binary outcomes with rare events (Puhr et al. 2017), including an earlier study of corruption in Japan where corruption occurred in approximately 2 percent of cases analyzed (Nyblade and Reed 2008).

Table 1 Descriptive Statistics and Data Sources

Variables	Mean	SD	Min.	Max.
Corruption	0.002	0.042	0	1
Poverty rate	12.475	5.522	1.8	52
Unemployment rate	5.828	2.688	0.7	40.4
Population	51,742.33	197,388.1	255	8,391,881
Education (% of population over 25 without high school diploma)	19.517	8.064	0	68.4
Form of government	0.592	0.491	0	1
Mayor election method (at-large/other)	0.787	0.409	0	1

Variables	Data Sources
Corruption	U.S. Bureau of Justice; newspaper search
Poverty rate	Small Area Income and Poverty Estimates Program
Unemployment rate	U.S. Census Bureau, FactFinder
Population	U.S. Census Bureau, FactFinder
Education (% of population over 25 without high school diploma)	U.S. Census Bureau, American Community Survey
Form of government	Author data set
Mayor election method (at-large/other)	Author data set

The first step was to perform the standard fixed-effects logit. This model echoes what is seen most often in public administration literature when the dependent variable is binary. Once again, for the reasons explained earlier, the authors expected it to have biased coefficients and to underestimate the probability of corruption as measured by charges being filed. The model controls for socioeconomic variables that are expected to be related to municipal corruption: poverty rate, the unemployment rate, percentage of the population with a high school degree, and population (see table 1). In addition to those variables, the model includes a binary variable for council-manager form of government. There also are binary variables controlling for whether the municipality has an at-large mayor and whether there has been a change in form of government in the previous five years. It also controls for year effects.

Results and Discussion

Table 2 presents the results of the fixed-effects logit model. Before discussing the results, it is important to note many issues with this model. First, as described in the methodology section, logit models present biased coefficients and underestimate the probability of the event occurring in the cases of rare event dependent variables. Second, because of the use of fixed effects, all municipalities that did not have at least one corrupt act over the period were dropped because they all had negative outcomes and there needs to be time variance.[6] This includes the vast majority of the municipalities being modeled. In fact, once the municipalities with no instances of corruption charges being filed were removed, only 66 municipalities remained within the data set. Many municipalities have more than one instance of corruption over the period being modeled; for example, Chicago had nine instances, while Newark had seven. Similar issues arise with logit modeling using small sample sizes. The Firth logit was also used to deal with small samples sizes, though it was not necessary in the case of this model because all observations were retained.

The results of the fixed-effect logit suggest that none of the variables of interest have statistically significant effects on the likelihood of corruption charges being filed.

Table 2 Impact of Form of Government on Municipal Corruption Using a Fixed-Effects Logit

	Coefficient	Standard Error
Poverty	−0.013	0.036
Unemployment rate	0.091	0.086
Log of population	−0.635	0.771
Change in form of government	0.781	1.083
Education	−0.022	0.036
Council-manager	1.257	1.248
Mayor at-large	−0.283	3.148
Number of observations	1,684	

Note: Controls for year effects.

Table 3 Impact of Council-Manager Form of Government on Municipal Corruption Using a Firth Logit, 1990–2010

	Coefficient	Standard Error
Poverty	0.054	0.025**
Unemployment rate	0.077	0.056
Log of population	1.121	0.076***
Change in form of government	0.286	0.333
Education	−0.003	0.021
Council-manager	−0.842	0.299***
Mayor at-large	−0.682	0.367*
Constant	−19.137	1.811***
Number of observations	57,285	

Note: Controls for state and year effects.
***$p < .01$; **$p < .05$; *$p < .1$.

Moving on to the preferred model, the Firth logit or penalized maximum likelihood regression, the results are presented in table 3. These results are more robust and interesting. To interpret the coefficients, it is necessary to convert them into log odds. This is done by calculating the exponentiated coefficient, or exp(coefficient) = log odds. The primary variables of interest are the form of government binary variables. The model uses the mayor-council form of government as the baseline. The council-manager form of government is expected to be 57 percent less likely than the mayor-council form to have an instance of corruption. This finding

is statistically significant at the 1 percent level. It also supports the first hypothesis and far surpasses expectations.

While there is strong support for hypothesis 1, there is no evidence for hypothesis 2. In fact, the results suggest the opposite. The presence of a mayor elected at-large is found to decrease the risk of corruption by 49 percent. This finding is statistically significant at the 10 percent level. Interestingly, it is most likely the council-manager form of government driving this result. While many associate nonelected mayors with council-manager governments, there is a great deal more diversity within the council-manager form especially in contrast to the mayor-council form. Less than 1 percent of mayors are appointed in the mayor-council form of government in contrast to the 36 percent appointed in the council-manager form of government within the population of municipalities being analyzed here.

Support for the remaining hypotheses is mixed. First, as hypothesis 3 expected, a 1 percentage point increase in poverty increased the likelihood of corruption by 6 percent. This finding is statistically significant at the 5 percent level. Second, a 1 percent increase in population is expected to increase the likelihood of corruption by 2 percent. This finding is statistically significant at the 1 percent level. These findings are in keeping both with the hypotheses and previous literature. As noted earlier, both domestic and international studies have found a connection between poverty and corruption (Lui 1996; Treisman 2000), but there is some debate as to whether poverty contributes to corruption or whether corruption leads to poverty. Internationally, poverty is associated with a breakdown in the full capacity of government. Government is unable to provide sufficient services, there is inadequate professionalism and oversight, and elections are often compromised. There is limited research domestically to explain why the relationship between poverty and corruption exists. In the United States, stories from cities that have been the victims of corruption point to the lack of attention paid to government, particularly in low-income communities. Bell, California, is one of the most recent examples. The primarily working-class families in Bell, many of them first-generation Americans, were struggling to make ends meet while their officials, the city manager, and the assistant city manager colluded to pad their paychecks to the tune of hundreds of thousands of dollars. An earlier ballot measure that modified the charter to exempt council members from state salary limits had drawn only 400 voters.

However, in contrast to the hypotheses, the unemployment rate and the percentage of the population without a high school education by age 25 were not statistically significant. Additionally, the model includes a binary variable to control for whether there had been a change in form of government within the previous five years, thereby controlling for the possibility that municipalities concerned about corruption had changed their form of government and for the possibility that a change in form of government may reveal corruption that had already taken place. No evidence of that relationship was found. In addition to these variables of interest, the model also includes state and year fixed effects. Numerous of those coefficients are statistically significant, and those results are available upon request from the authors.

Conclusion

Scholars investigating corruption, whether internationally or within the United States, often begin by referencing the corrupt political machines that ruled American cities during the Industrial Era. Numerous Progressive Era reforms were intended to eliminate the political machines and install professional, high-quality government systems. One such reform that remains in place and is widely used today is the council-manager form.

Studies have made the case that the council-manager form was intended to separate the administrative day-to-day functions of running a local government from the electoral political system (Choi, Feiock, and Bae 2013; Montjoy and Watson 1995; Svara 1985). Other research has investigated how this separation changes the nature of the political and administrative incentives inherent in the two forms of government (Feiock, Jeong, Kim 2003; Frant 1996). However, this study is the first to find evidence of these differences and the risk of a local government becoming the victim of a corrupt act. The literature suggests that the council-manager form of government reduces corruption as a result of mechanisms inherent to it. The traditional thinking is that the independence afforded to both the mayor and council members due to the separation of powers within the mayor-council form means that elected officials in this system face greater benefits and lower costs associated with corrupt acts than do their counterparts in the council-manager form. Whereas for crimes against the government made by staff, the professionalism of the council-manager form leads to a greater likelihood that appropriate internal controls are in place to safeguard against this type of corruption.

Each year, local communities debate changing their form of government. Often, when the proposal is made to change from the council-manager to the mayor-council form, the argument is made that the mayor-council form provides greater accountability to the public than the council-manager form. Those who make this argument claim that a mayor who is elected citywide is more accountable to the voters. However, direct voter accountability does not mean greater oversight. In fact, oversight is lessened when greater political independence is afforded to a single person, as in the mayor-council form, and the evidence presented here suggests significantly higher levels of corruption associated with the mayor-council form of government as opposed to the council-manager form. Interestingly, this research also found evidence that an at-large mayor is also more likely to reduce instances of corruption.

Perhaps the most compelling finding in this study is the unexpected association of an elected mayor with lower corruption. The literature speaks to the greater electoral incentives in the mayor-council form as potentially contributing to corrupt acts. Although the council-manager form as originally conceived by Richard Childs would have a nonelected mayor, today, the majority of council-manager mayors are elected at-large. It is important to note that whether elected or not a mayor's roles differ considerably in the two forms of government and that mayors within a council-manager form typically have minimally greater authority than that of the other members of council.

The other significant finding from this study suggests that poverty does increase the probability that a city will be subject to a corrupt act. Ironically, poor communities can least afford to be victimized by public corruption but are also at higher risk. Why this is the case remains an open question. One possibility is that municipalities that are operating on limited budgets are likely to pay lower salaries, leading to a lower quality staff or higher incentives for embezzlement. Also, given that citizens in these communities are generally less well educated and struggle financially, they are less likely to have the knowledge and free time to fully engage with their local governments.

Future research is needed to address some of the missing pieces and unanswered questions in this study. First, the question of the mayor elected at-large coupled with the council-manager form deserves greater attention. Any mayor who is running for office is potentially vulnerable to unethical solicitations to help win the election. Yet the presence of an elected mayor seems to offer some insulation from corrupt acts within the council-manager form of government. Therefore, this research suggests that it is important for scholars to examine the differing electoral incentives in place under a council-manager form of government for the office of mayor and how those differences may impact the previous understanding of the effect they have on likelihood of corruption.

Second, is there a way to determine the extent of "small" cases of local government corruption? What happens when someone steals $1,000 instead of $100,000? It is likely that many of these cases are being handled without revealing the situation to the public, but currently there is no way to prove that. Third, is there a way to better incorporate state-prosecuted cases of corruption? In states that do not distinguish between public and private corrupt acts, can a way be found to mete out those cases that involve local government?

Fourth, our findings suggest that mayors elected at-large lower the risk of corruption despite the prevailing theory. This warrants future attention. Finally, what other factors not considered in this study may be related to corruption risk? Although there is a control for state effects, it is possible that a set of variables could be developed to more precisely account for differences in state oversight. North Carolina, for example, has the Local Government Commission (LGC); created during the Great Depression, the LGC provides technical expertise and oversight for North Carolina municipalities. Much of LGC's work is financial in nature, but it also oversees the management of municipalities by requiring them to conduct independent financial audits to be remitted to the commission.

This study makes a significant contribution to the literature on form of government and the literature on corruption. Although some earlier research suggests that the council-manager form offers some advantages over the mayor-council form, until now there have been no empirical findings suggesting a systematic difference between the two. This study provides evidence that municipalities using council-manager form of government are less likely to have corruption charges filed than are municipalities with the mayor-council form of government. The prevention of corruption is critical to successful government, and this research presents a strong case for the council-manager form of government.

Notes

1. There are very few empirical studies on county form of government and its relationship to performance outcomes.
2. The International City/County Managers Association conducts periodic surveys of municipal government form. The 2011 survey, sent to all municipalities with population of 2,500 or more (41 percent response rate), found that 59 percent of respondents use the council-manager form. The authors' data set, which contains all municipalities with populations over 10,000, shows that 52 percent use the council-manager form.
3. Conspiracy to defraud the United States, 18 U.S.C. § 371; theft or bribery concerning programs receiving federal funds, 18 U.S.C. § 666; interference of commerce by threats or violence or by extortion (Hobbs Act), 19 U.S.C. § 1951; frauds and swindles involving the postal system, 18 U.S.C. § 1341; bank fraud, 18 U.S.C. § 1344; deprivation of honest services, 18 U.S.C. § 1346; money laundering, 18 U.S.C. § 1956; RICO, 18 U.S.C. § 1962; and fraud and false statements, 26 U.S.C. § 7206.
4. Since the data span 20 years, several municipalities were chartered, dissolved, merged, or had name changes during that time. Four that merged with their counties were removed from the data set. Others were dropped due to missing data. If a municipality was incorporated after 1990, the pre-incorporation years are excluded.
5. Logit coefficients are widely recognized to be biased in small samples—anything under approximately 200. However, what is less well understood is that rare events (even when the sample size is large) will be biased and the estimated probability of an event occurring will be estimated to be smaller than the actual likelihood of it occurring (King and Zeng 2001).
6. The model would also have dropped any municipalities with all positive outcomes, but those do not exist within the data.

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