ELSEVIER

Journal of Public Economics 90 (2006) 1053–1072

JOURNAL OF PUBLIC ECONOMICS

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Corruption in America

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Received 5 October 2004; received in revised form 24 August 2005; accepted 24 August 2005
Available online 4 October 2005

Abstract

We use a data set of federal corruption convictions in the U.S. to investigate the causes and consequences of corruption. More educated states, and to a smaller degree richer states, have less corruption. This relationship holds even when we use historical factors like Congregationalism in 1890 as an instrument for the level of schooling today. The level of corruption is also correlated with the level of income inequality and racial fractionalization, and uncorrelated with the size of government. There is a weak negative relationship between corruption and economic development in a state. These results echo the cross-country findings, and support the view that the correlation between development and good political outcomes occurs because education improves political institutions.

JEL classification: K4; O1; H0
Keywords: Public corruption; Institutions; Economic development

1. Introduction

Corruption is not just something that happens to poor countries. Between 1990 and 2002, federal prosecutors convicted more than 10,000 government officials of acts of official corruption, such as conflict of interest, fraud, campaign-finance violations, and obstruction of justice. Recently, the governors of both New Jersey and Connecticut have had to resign amidst allegations of corrupt practices. The past three insurance commissioners of Louisiana have been convicted for official misdeeds (Corporate Crime Reporter, 2004). America's past is even more

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doi:10.1016/j.jpubeco.2005.08.007

sordid (see Glaeser and Goldin, 2004). City leaders like William M. Tweed engaged in practices that would look at home in the most corrupt nations today.

But if America's corruption is bad news for the country, it is a mixed blessing for economists studying corruption. Cross-national research on corruption has been forced to rely on opinion surveys that ask private individuals about the levels of corruption in a nation. Empirical work using these surveys has established that perceived corruption increases with ethnic fragmentation, and that there is a strong negative correlation between perceived corruption and investment and a weak negative correlation between perceived corruption and growth (Mauro, 1995). LaPorta et al. (1999) confirm that more fractionalized countries are more corrupt. Furthermore, they also document a strong relationship between economic development and corruption.

While these opinion surveys contain valuable information, there are many reasons why they might not present an accurate depiction of corruption. The meaning of corruption is subjective and can vary greatly from one country to the next. Furthermore, the types of corrupt activities could be substantially different in each country, making a comparison of the general level of corruption even more difficult. As an alternative, some of the most exciting work on corruption has used within country data on bribery by firms (Svensson, 2003) and politicians (McMillan and Zoido, 2004). These studies are, however, poorly suited for asking the basic questions about what national characteristics are conducive to corruption and what is the impact of corruption on economic development.

In this paper, we use information on the amount of corruption in each of the states in the U.S. to examine the local characteristics associated with corruption and the impact of corruption on economic development. Although using variation across states can provide a useful insight into these questions, it should be kept in mind that the results might not be generalizable to global differences in corruption and economic development across countries. No state today is as poor or as corrupt as many countries in the developing world, and so relying on variation across the states in the US limits research to a small part of the distribution of both independent and dependent variables.

However, cross-state variation does have one significant advantage. Instead of relying on survey evidence, we use more concrete measure of corruption — the number of government officials convicted for corrupt practices through the Federal justice department. These conviction levels capture the extent to which Federal prosecutors have charged and convicted public officials for misconduct in each of the fifty states. The usual problem with using conviction rates to measure corruption is that in corrupt places, the judicial system is itself corrupt and fewer people will be charged with corrupt practices. This problem is mitigated when focusing on Federal convictions, because the Federal judicial system is relatively isolated from local corruption and should treat people similarly across space. Measuring corruption as the number of Federal corruption convictions per capita by state, we examine the state characteristics that predict corruption and whether corruption appears to deter economic growth at the state level.

In this paper, we focus on three theories concerning the causes of corruption. The first hypothesis, based loosely on Lipset (1960), is that places with higher levels of income and education are less corrupt. The key element of this hypothesis is that voters with more education and income are more willing and able to monitor public employees and to take action when these employees violate the law. A second hypothesis, connected with Mauro (1995) and Alesina et al. (2002), is that ethnic heterogeneity increases corruption. As voters become more diverse along ethnic or income lines, then voting will inevitably focus on redistribution rather than on the honesty of government officials. The third hypothesis that we test is that places with more

government revenues or regulations will have higher levels of corruption, as these places will have more assets to steal and more rules to subvert.[1]

We find significant support for the first hypothesis. States that are richer and better educated are less corrupt. The impact of education on corruption is much stronger and more robust. To address the issue that corruption might reduce education and education levels, we predict these variables with historical data on income, congregationalism, and proximity to the coasts, and still find that income and education are associated with less corruption today. Because even historical data might be correlated with omitted variables, we also examine changes in corruption during the 1980s and 1990s and find that states with higher initial levels of income and education had lower growth in corruption rates.

In addition to the effect of education, we also find that heterogeneity within a state, measured as both income inequality and racial dissimilarity, increases corruption. Finally, we find only weak evidence linking bigger government or more regulation with more corruption. However, as states may be less likely to support a larger government if it is corrupt, this lack of correlation may reflect reverse causality.

Finally, we turn to the connection between state growth and corruption. We regress growth in employment, income and housing values between 1980 and 2000 on the average number of corruption convictions over the years 1976–1980. More corrupt places experienced slower income growth, but we do not find any effect on employment or housing values. Moreover, the effect on income becomes statistically insignificant once we control for other factors that limit growth and are correlated with corruption.

Overall, we conclude that the pattern of corruption across the US states is broadly consistent with evidence from international comparisons based on opinion surveys. The fact that these results are similar lends further support to the validity of both ways of measuring corruption, as well as to the empirical findings that corruption declines with income and education and rises with ethnic heterogeneity.

2. The determinants of corruption

This paper will address both the causes and consequences of corruption. Because, the reasons why corruption might limit growth are better understood (see e.g. Shleifer and Vishny, 1993; Ehrich and Lui, 1999), in this section we review only the potential causes of corruption. If corruption is defined as crimes by public officials for personal gain (Rose-Ackerman, 1975), then the economic theory of corruption should follow closely the economic theory of crime (Becker, 1968). The potential criminal, in this case a government official, weighs the benefits of crime against its costs. National or state characteristics will influence the level of corruption as they alter the benefits and costs of crime.

The benefits of corruption come from government actors being able to allocate resources, including the right to bypass certain regulations, to private individuals. As such, the benefits to a political actor from being corrupt should be increasing in the size of government and in the individual's discretion over government actions. Greater numbers of regulations also increase the

[1] Fisman and Gatti (2002), Berkowitz and Clay (2004), Adsera et al. (2003), and Schlesinger and Meier (2002) also use this state conviction data to test other theories of corruption. However, none of these papers test the effects of the level of income or ethnic heterogeneity on corruption, nor do they discuss the effect of corruption on economic growth. Moreover, in contrast to these papers, we explore alternative identification strategies by examining changes in corruption over time and instrumenting for income and education with historical variables.

opportunities for helping private actors evade these regulations, therefore increasing the possibilities for bribe taking. The size of the economy can increase the returns to bypassing regulations or to corrupting the legal system (as in Glaeser and Shleifer, 2003). Therefore, we will test whether states with bigger governments and more regulation have more corruption.

The costs of corruption are driven by the probability of being caught and the penalties from being caught, which include imprisonment, electoral defeat and loss of reputation. We focus on two factors that have been the focus of the literature on corruption: economic development and heterogeneity.

While the modern literature on corruption began with work on whether corruption makes countries poor (e.g Mauro, 1995), it is also reasonable to ask whether poor countries naturally tend towards corruption (as in Lipset, 1960; Glaeser et al., 2004). Empirical research has shown that political involvement rises with income and education. This positive relationship may be because political attention is a luxury good, or because education makes it easier to learn about politics. Furthermore, education may indoctrinate individuals towards having a higher value of staying politically involved. As a result, places with richer and more educated citizens may have people who are more willing to pay attention to corrupt activities and who are better able to take action against these officials. Higher levels of income and education will also increase the ability of private individuals to punish malfeasance by members of the government.[2]

One problem with testing whether income and education decrease corruption is that these variables might themselves be functions of the quality of government. Long standing corruption might induce capital to flee and reduce the quality of schools, which would produce a negative relationship between education and corruption. Another concern is that education and income might be related to other unobservable factors that are the true explanation for variation in corruption across locations. While there is no perfect way to estimate the causal effect of income and education on corruption, we will use several methods to address the problems of reverse causality and omitted variable bias. To minimize the concern that the relationship between income and corruption is driven by omitted variables, we estimate the effect of income and education on changes in corruption over the past twenty years. We also predict income and education using long-standing variables that relate to education and wealth, such as the fraction of Congregationalist church members in 1890 and median household income in 1940. Both of these variables continue to predict education and income to this day, and we believe that they are otherwise uncorrelated with modern-day corruption. However, skeptics might be concerned that these variables might themselves have been determined by historical levels of corruption, and that these levels of corruption have persisted over time. While we do not have a strong defense against that view, our reading of historical commentators, like Steffens (1957) suggests that corruption was ubiquitous 100 years ago and that the characterization of corruption across states historically does not always line up with differences in corruption today (see also Glaeser and Goldin, 2004).

Another set of theories on the determinants of corruption has focused on the effect of ethnic fragmentation on corruption and wasteful redistribution (Mauro, 1995 and Alesina et al., 2002). Ethnic fragmentation impacts corruption by reducing the popular will to oppose corrupt politicians. If an area is torn apart by ethnic divisions and leaders tend to allocate resources towards backers of their own ethnicity, then members of one ethnic group might continue to support a leader of their own ethnic group, even if he is known to be corrupt. American history is

[2] As emphasized by Alt and Lassen (2003), the probability that a corrupt public official is caught will also be related to how observable his actions are to the voters. Therefore, political institutions that change the transparency of government and the amount of information available to the public can also have an impact on corruption.

replete with examples of ethnic groups supporting leaders, like James Michael Curley or Marion Barry, even when those leaders are in jail. Other forms of division, such as income inequality, may also reduce voters' desire to oppose corruption. To test this hypothesis, we will examine the effects of ethnic heterogeneity and income inequality on corruption.

3. The empirical determinants of state level corruption

We begin this section by describing our data, and then turn to testing the relationships between corruption income, education, racial heterogeneity and various governmental variables.

3.1. Data description

Our corruption data is derived from the Justice Department's "Report to Congress on the Activities and Operations of the Public Integrity Section." This publication lists the number of federal, state and local public officials convicted of a corruption-related crime by state. Using the 1989, 1999, and 2002 reports, we collect information on the number of convictions by state annually from 1976 to 2002. Following a strategy similar to the Corporate Crime Reporter (2004), we then divide these convictions by average state population from to form an estimate of the state conviction rate per capita.[3] The average number of convictions per year, state population averages, and conviction rates are shown for every state in Appendix Table A1. On average, about .28 public officials were convicted of corruption each year for every 100,000 people in the population. There is a fairly wide degree of variation across states, as the standard deviation is .13 convictions per 100,000.

The crimes investigated by the Department of Justice (DOJ) include a wide array of topics such as conflict of interest, fraud, campaign-finance violations, and obstruction of justice. While the majority of public corruption cases are handled by the local US attorney's office, the DOJ currently prosecutes about 2000 cases per year. These cases are generally brought to the attention of the DOJ through four main channels. First, some cases are referred to the DOJ for federal prosecution if they involve individuals with close ties to local government, thereby making it inappropriate for them to be tried by the local US attorney's office. The DOJ also handles cases that involve multiple jurisdictions. Third, federal agencies can directly refer questionable behavior of public employees to the DOJ for investigation. Finally, the DOJ can be called in to handle cases that require an unusual amount of resources or special supervisory assistance.

According to the 2002 report, generally about half of the corruption convictions each year involve federal public officials. One such high-profile case was a former Supervisory Deputy U.S. Marshal in Colorado, who was prosecuted by the DOJ and convicted of perjury in relation to false statements made in the 1997 trial of Timothy McVeigh. Another quarter of the federal convictions are state or local officials, and the remaining cases are private citizens involved in public corruption cases. For example, in 2002 six police officers in Alabama were convicted of extortion and soliciting bribes from individuals detained by the police department in exchange for not pursuing criminal charges against them. Election fraud is also a priority of the DOJ. In 1999, an individual was convicted of using fraudulent means to make illegal excessive contributions to a senator's reelection campaign.

[3] The conviction rates are also adjusted to account for a few observations for which convictions were not reported. In these cases, we impute the number of convictions as an average of the observed number of convictions in a surrounding 5-year period.

Table 1
States with most and least convictions per capita

Most convictions		Fewest convictions	
State	Average annual convictions per 100,000 Pop.	State	Average annual convictions per 100,000 Pop.
Alaska	0.643	Colorado	0.151
Mississippi	0.612	Wisconsin	0.150
Louisiana	0.513	Nebraska	0.133
South Dakota	0.472	Utah	0.130
Tennessee	0.464	Iowa	0.127
Illinois	0.458	New Hampshire	0.125
New York	0.439	Minnesota	0.121
Oklahoma	0.415	Vermont	0.115
Montana	0.414	Washington	0.104
North Dakota	0.398	Oregon	0.074

The first obvious question to ask is whether this conviction rate meaningfully measures the degree of corruption across states. Table 1 ranks corruption levels by state for the ten most and least corruption states. To us, this list lines up reasonably well with our preconceived notions about the areas in the U.S. that are more corruption. Mississippi and Louisiana are among our most corrupt states. New Hampshire and Oregon are among the least corrupt states. Moreover, this measure of corruption is positively correlated with a 1998 survey of state house reporters' perception of public corruption (Boylan and Long, 2003).

Because the conviction data are less subjective, cover longer time span, and are not subject to the problems of sampling error and survey non-response, we believe that using these data has distinct advantages over the survey-based evidence. There are, of course, several disadvantages of using this measure of corruption. If the Department of Justice is not equally vigilant in prosecuting corruption cases in all states, we could be underestimating the degree of corruption in more corrupt states. A related concern is that some cases are referred to the Federal agency if the state does not have the resources to handle the case, which might lead to a negative correlation between state income and the number of Federal corruption prosecutions. Furthermore, this measure will only reflect corruption that is related to the types of cases prosecuted by the Department of Justice. States with a lower number of corruption convictions may simply have other types of corrupt practices among their government officials. Nonetheless, this measure of corruption is far more comparable across states than international survey evidence.

3.2. Corruption and state characteristics

Using the average number of corruption convictions from 1976 to 2002 relative to average population over the same time period, we now investigate the correlates of corruption. Our first approach is to regress:

$$\text{Conviction Rate} = a\ \ \text{Income} + b \bullet \text{Education} + \ \text{Other Controls} \tag{1}$$

In all regressions, we include controls for the 1970 values of the logarithm of state population, the share of urbanized population, the fraction of workers employed in government (which includes federal, state and local), and dummy variables for each of the four Census regions. The definitions and sources of all variables used in this analysis can be found in the data

Table 2
Relationship between average corruption rate 1976–2002 and levels of income and education in 1970

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Income)	−.203 (.144)		−.038 (.163)	−.470** (.179)		−.432 (.265)
Share with 4+ years of college		−2.91** (1.18)	−2.74* (1.39)		−5.03** (2.27)	−1.88 (2.50)
Ln(Population)	.035 (.023)	.030 (.022)	.030 (.023)	.021 (.021)	.019 (.023)	.019 (.022)
Share gov. employment	1.60** (.392)	1.78** (.382)	1.79** (.392)	.597 (.525)	1.60** (.676)	.955 (.722)
Share urban	.037 (.176)	−.075 (.175)	.084 (.181)	.233 (.192)	.305 (.242)	.363* (.212)
South	.107* (.057)	.086 (.056)	.085 (.057)	.091* (.052)	.051 (.065)	.055 (.059)
Northeast	.127** (.060)	.098* (.056)	.103* (.060)	.112** (.054)	.069 (.058)	.098* (.058)
Midwest	.091 (.058)	.039 (.057)	.043 (.061)	.079 (.052)	−.007 (.064)	.043 (.066)
Constant	1.45 (1.39)	−.299 (.312)	.050 (1.52)	1.58** (.148)	.266 (.133)	−.533 (1.96)
1st stage F (income)				15.6 (.00)		13.7 (.00)
1st stage F (education)					13.2 (.00)	3.75 (.01)
OverID test				5.85 (.21)	–	6.97 (.14)
Adj. R^2	.27	.34	.32	.11	.16	.14
# Obs.	50	50	50	48	45	45

Note. All independent variables are from the 1970 Census. Income is measured as median household income in the state. The instruments used in column 4 are the logarithm of median household income in 1940 and quadratic functions of longitude and latitude. The instrument used in column 5 is the fraction of church members who are congregationalist from the 1890 Census. Column 6 uses all of these variables as instruments. The 1st state F-statistic tests the hypothesis that the coefficients on all of the excluded instruments in the first stage are equal to zero. The over-identification test is Sargan's statistic.

Appendix. We measure income using the logarithm of median household income and education as the share of the adult population with 4 or more years of college completed. Both of these variables are taken from the 1970 Census. The urban population share is also from the 1970 Census. Total population and the values of government and total employment are the 1970 values from the annual estimates published the Bureau of Economic Analysis.

The first column of Table 2 shows that states with higher incomes in 1970 are associated with lower corruption rates during the period 1976–2002. However, this effect is small and imprecisely estimated. The coefficient estimate indicates that a .1 log point increase in median income (approximately 10%) is associated with .02 fewer convictions per 100,000 inhabitants, or about one sixth of the standard deviation of corruption rates across states. States in the Northeast and states with a higher fraction of government workers have more corruption convictions per capita, which are results that persist in many of the specifications we will show below. The magnitude of the government coefficient is relatively large, as a 5 percentage point increase in the government share (slightly less than 1 standard deviation) would lead to an increase in corruption of .6 of a standard deviation. One interpretation this effect is that states with more government employment have a larger number of public officials, and therefore have more people to convict.[4] As we will show below, other measures of the size of state and local government appear to have no influence on corruption.

[4] Ideally we would calculate the corruption rate as the number of convictions relative to the total number of public officials, but these data are not available by state for our entire sample period.

In the regression shown in column 2, we replace the income variable with a measure of the level of education in the state, which we define as the fraction of the adult population with four or more years of college completed. The impact of education on the rate of corruption convictions is quite strong and much more robust than the impact of income on corruption convictions. This can be seen in column 3, which shows that when we control for both education and income, the effect of income becomes much smaller. As the share of highly educated people increases by 2.2 percentage points (one standard deviation), the corruption conviction rate decreases by .064, which is about half of a standard deviation.

As income and education levels may themselves be the result, not the cause, of lower corruption levels, next we use historical data as an instrument for the levels of income and schooling in 1970. In column 4, we predict the level of income in 1970 with median family wage and salary income in 1940 (calculated from the Integrated Public Use Microdata) and the geographic location of each state. Geographic characteristics, such as access to a natural harbor or an easily navigable river, can greatly reduce transportation costs and cause economic activity to be more productive. Therefore, proximity to an ocean or major river is strongly correlated with income (Rappaport and Sachs, 2003). As a proxy for proximity to the coasts, we use quadratic functions of latitude and longitude as a second set of instruments for income.[5] As shown by the large first-stage F-statistic and the first-stage regressions in Appendix Table A2, all of these variables are strong predictors of income in 1970. Using these instruments, the effect of income on corruption becomes substantially larger, so that a 10% increase in income would lead to a reduction in corruption of one third of a standard deviation.

To deal with the reverse causality between education and corruption, we use the share of church members in the state that are Congregationalist, which is available for 45 states in the 1890 Census. Congregationalism was almost never a dominant religion during this time period, but it is generally associated with elites and their commitment to education. As a result, the education system developed more quickly in those states with more Congregationalists and, as shown by the strong first-stage F statistic, those states remain more educated today. In regression (5), where we use Congregationalism in 1890 as an instrument for schooling today, we estimate an effect of schooling that is twice the size as the effects estimated in the OLS regressions. The overidentification tests reported in the bottom of the table show that the instruments are uncorrelated with the error terms in the second stage equations, which suggests that these variables do not have an independent impact on the level of corruption and therefore the exclusion restrictions are valid. When including both education and income in the regression (column 6), the high degree of correlation between these two variables decreases the precision of the estimates. Although the point estimates remain negative, both effects become insignificantly different from zero.

Despite the fact that the instruments discussed above cannot be directly influenced by the level of corruption fifty to one hundred years later, these variables still might be correlated with other omitted factors that are the true determinants of corruption. There is also a concern that corruption might reduce economic development rather than economic development reducing corruption. One potential approach to avoid bias from omitted state-level variables would be to estimate regressions with state fixed effects, which essentially asks whether changes in education predict changes in corruption. While state fixed effects are attractive, education levels persist too strongly across states for this methodology to yield any meaningful results. For

[5] Alaska and Hawaii are excluded from regression (4) because they were not states in 1940 and so were not included in the 1940 Census.

example, the correlation of the percent of adults with four years of college or more in 1970 and 2000 is .80.

An alternative approach is to ask whether high levels of initial schooling or income predict subsequent improvements in corruption. Regressing changes in corruption on initial levels can be interpreted as examining whether places with a higher-educated population come to improve their quality of governance. These regressions can also be interpreted as telling us about the relationship between steady state levels of corruption and education. If high levels of education lead to lower levels of steady state corruption, and if there are some temporary shocks that cause corruption to deviate from its steady state level, then we should expect education to predict reductions in corruption.

We estimate the effect of initial income and education on changes in corruption over the 26-year sample period. Because the year-to-year fluctuations in the conviction rates are noisy, we calculate an average corruption rate over the 5-year periods 1976–1980 and 1998–2002 for each state and measure the change in corruption as the difference between these two values. On average, the conviction rate increased by about .18 per 100,000 during the past two decades. The states with the largest increases in corruption were Mississippi and Montana, while New Mexico and South Carolina both experienced decreases in the number of corruption convictions per capita.

In Table 3, we present the results of regressing changes in corruption on initial income and education in 1970. The regressions control for the initial level of corruption in 1976–1980 and the share of government employment in 1970. Because looking at changes substantially increases the level of noise relative to signal in the dependent variable, we have included a

Table 3
Relationship between changes in corruption 1976–2002 and levels of income and education in 1970

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Income)	−1.50 (1.47)		.084 (.205)	−.425** (.180)		.083 (.456)
Share with 4+ years of college		−2.44* (1.29)	−2.97 (1.84)		−7.14 (5.17)	−5.44 (4.35)
Share gov. employment	.974** (.441)	1.31** (.479)	1.36** (.497)	−.276 (.654)	1.76 (1.13)	1.59 (1.32)
Corruption 1976–1980	−.562** (.230)	−.644** (.231)	−.650** (.233)	−.728** (.229)	−.854** (.391)	−.736** (.277)
Constant	1.58 (.148)	.266* (.133)	−.533 (1.96)	4.62** (.187)	.707 (.456)	−.293 (4.40)
1st stage F (income)				20.7 (.00)		16.27 (.00)
1st stage F (education)					3.61 (.06)	6.89 (.00)
OverID test				6.01 (.20)	–	5.20 (.27)
Adjusted R^2	.11	.16	.14	.18	−.15	.04
# Obs.	50	50	50	50	45	45

Note. Changes in corruption are measured as the difference between the average corruption rate during the years 1976–1980 and the average corruption rate in the years 1998–2002. All independent variables are from the 1970 Census. Income is measured as median household income in the state. The instruments used in column 4 are the logarithm of median household income in 1940 and quadratic functions of longitude and latitude. The instrument used in column 5 is the fraction of church members who are congregationalist from the 1890 Census. Column 6 uses all of these variables as instruments. The 1st state F-statistic tests the hypothesis that the coefficients on all of the excluded instruments in the first stage are equal to zero. The over-identification test is Sargan's statistic.

smaller set of controls than in the previous specification.[6] The strong negative impact of initial corruption reveals that the corruption rate has been converging across states over time. In both the OLS and IV results, we find that states with higher levels of income and education experienced smaller increases in corruption during the past two decades. The magnitudes of the coefficients are similar to the effects found in the level regressions, although the estimates are a bit less precise.

Taken together, the results shown in Tables 2 and 3 suggest that the levels of corruption in a state are negatively related to income and education. These findings are consistent with the analysis of Adsera et al. (2003), who find that convictions are negatively associated with measures of social capital and political participation. Schlesinger and Meier (2002) also find a negative correlation between state education levels and corruption, which they interpret as an indication that the middle-class are more opposed to corruption because corrupt practices are more likely to benefit the lower class.

An important caveat to these results, as well as to the other results presented in the remainder of the paper, is that they are based on a cross-section of states with at most fifty observations. Due to this small number of degrees of freedom and the high degree of correlation among various other variables that could be potentially used as controls, our results are somewhat sensitive to which other variables are included in the regression. We have chosen this set of controls because they provide a relatively parsimonious way of capturing other economic factors that might be correlated with corruption and our independent variables of interest. While the statistical significance of these results depends on the specification chosen, the signs and magnitudes of the effects are relatively similar across a broad set of alternative control variables.[7] Therefore, we focus our analysis on the direction and magnitude of our estimates, and do not place too much weight on the statistical significance of any given result.

In Table 4, we turn to the role of income and racial heterogeneity. All of the regressions include education and income, in addition to our basic controls. The level of education continues to have a negative coefficient, an effect that is statistically significant in most of these specifications. Income inequality is the Gini coefficient of family income in 1970, as reported by the Census Bureau.[8] In regression (1) of this table, we find that more income inequality increases the level of corruption, as a 1 standard deviation increase in inequality is associated with a 1 standard deviation increase in the average conviction rate.[9]

The remaining columns of the table investigate the influence of racial heterogeneity. To measure racial differences in 1970, we calculate a dissimilarity index as $1-\Sigma s_i^2$, where s_i is the population share of group i. The index is calculated from the population shares of Whites, Blacks, and other races, which are the only categories reported in the 1970 Census. Column (2) shows that states with more racial heterogeneity have more corruption, and column (3) shows that this result is largely driven by the share of the population that is black. The

[6] When we include these controls, they all have small and statistically insignificant coefficients. The coefficients on income and education are similar in magnitude, but the loss of the additional degrees of freedom reduces the precision of the estimates.

[7] Ideally, we would like to be able to make use of the panel nature of the data and estimate regressions using state fixed-effects. However, we found the annual fluctuations in convictions to be too noisy to identify any interesting relationships.

[8] http://www.census.gov/hhes/income/histinc/state/statetoc.html.

[9] In contrast to the previous estimates, the level of income appears to have a positive effect on corruption in this specification. This strange result appears to be related to the fact that there was a very strong negative correlation between the level of income and the degree of inequality in 1970.

Table 4
Relationship between corruption and income inequality and racial heterogeneity

	(1)	(2)	(3)	(4)	(5)
Income inequality	4.88** (1.29)				
Racial dissimilarity (1970)		.485** (.178)			
Share Black (1970)			.711** (.269)		
Racial dissimilarity (1980)				.371** (.164)	
Share Black (1980)					.697** (.277)
Share Hispanic (1980)					−.067 (.322)
Share Asian (1980)					−.029 (.210)
Ln(Income)	.548** (.210)	−.104 (.153)	.023 (.152)	.007 (.156)	−.068 (.177)
Share with 4+ years of college	−3.50** (1.23)	−2.05 (1.32)	−2.57* (1.30)	−2.94 (1.33)	−2.61* (1.40)
Share gov. employment	.768* (.436)	1.25** (.416)	1.66** (.370)	1.34** (.424)	1.71** (.407)
Ln(Population)	−.001 (.021)	.012 (.022)	.011 (.022)	.008 (.024)	.012 (.024)
Share urban	−.009 (.159)	.034* (.169)	.085 (.169)	−.034 (.180)	.102 (.184)
South	.012 (.056)	.002 (.061)	−.012 (.064)	.054 (.056)	−.022 (.069)
Northeast	.069** (.053)	.107* (.056)	.090 (.056)	.124** (.058)	.087 (.059)
Midwest	.002 (.054)	.048 (.057)	.037 (.057)	.066 (.059)	.027 (.060)
Constant	−6.79** (2.25)	.989 (1.46)	.170 (1.42)	.016 (1.45)	.586 (1.63)
Adjusted R^2	.49	.41	.41	.38	.38
# Obs.	50	50	50	50	50

Note. Except where noted, all independent variables are from the 1970 Census. Income is measured as median household income in the state. Income inequality is the Gini coefficient on family income from the 1970 Census. Racial dissimilarity in 1980 is a fractionalization index equal to $1-\sum s_i^2$, where s_i are the population shares for the following racial/ethnic groups: White (non-hispanic), Hispanic (all races), Black, Asian, Native American, and other races. In 1970, the dissimilarity index includes the categories White, Black, and other races.

magnitudes of these coefficients suggest that a 1 standard deviation increase in the degree of racial fractionalization is associated with one half of a standard deviation increase in corruption.

In order to calculate a dissimilarity index using a larger variety of racial and ethnic groups, next we create an index using population shares from the 1980 Census that is based on the following groups: Hispanic (all races), White, Black, Asian, Native American, and other races. Although this measure of dissimilarity is slightly less exogenous, we find that it is also positively correlated with corruption. Again this result appears to be related to the share of the population that is Black, as the shares of Hispanics and Asians appear to have no effect on the rate of public officials convicted for corruption. Thus, we find strong evidence that both income and racial differences within a state appear to lead to higher levels of corruption. We find similar results looking at the change in corruption over the past two decades.

Finally, we turn to the role of government. As mentioned earlier, all of the results we have discussed up to this point have controlled for the share of total employment that is government. This government share includes federal, state and local employees, as well employees of government enterprises. While the positive coefficient of this variable could be interpreted as an effect of government size, it could also be simply a sign that there are more public officials in states with larger governments with the potential to commit a crime. Therefore, we examine the effect of numerous other measures of the size of government and the degree of regulation in Table 5. These specifications include all of the control variables that were used in Table 4, although the coefficient estimates are not reported.

The first set of regressions examines other general measures of government size. Corruption appears to increase with the fraction of government employment that is related to local

Table 5
Relationship between corruption and government size and regulation

	Average corruption	Change in corruption
Size of government		
State and local share of gov. employment, 1970[1]	.419 (.263)	.106 (.341)
State share of gov. employment, 1979[1]	−.667* (.337)	−.449 (.530)
Local share of gov. employment, 1979[1]	.538** (.256)	.355 (.392)
Ln(State legislators per capita, 1970)[4]	−.028 (.026)	−.014 (.030)
Ln(Number of local governments per capita, 1972)[2]	.008 (.031)	−.008 (.030)
Ln(State and local expenditures per capita, 1970)[3]	.253* (.128)	.307 (.187)
State and local share of total gross state product, 1977[1]	−1.56 (1.80)	−4.76* (2.69)
Regulation		
Ln(State and local tax revenue per $1000 of personal inc., 1970)[3]	.103 (.160)	.110 (.227)
Share of unionized workers, 1970[5]	.244 (.254)	.197 (.360)
Ln(Regulation Index, 1999)[6]	−.213 (.199)	−.212 (.297)
Ln(Economic Freedom Index, 1999)[6]	.153 (.147)	.164 (.200)
Ln(Small Business Survival Index, 2003)[7]	−.087 (.078)	−.104 (.120)
Integrity ranking, 2002[8]	−.0034** (.0011)	−.0031* (.0018)

Note. Each cell shows the result of a separate regression with the dependent variable named in the column. Regressions of the level of corruption control for the 1970 values of the logarithm of household income, the share of highly educated adults, the share of government in total employment, the logarithm of population, the share of urbanized population, and region dummy variables. Regressions of the change in corruption control for the logarithm of household income, the share of highly educated adults, the share of government in total employment, and the initial rate of corruption in 1976–80. The sources of the government data are:

1. Bureau of Economic Analysis.
2. Census of Governments, 1972 in *Statistical Abstract of the U.S.*, 1974.
3. U.S. Bureau of the Census, *Statistical Abstract of the U.S.*, 1972 and 1974.
4. Governmental Affairs Institute, *America Votes* in *Statistical Abstract of the U.S.*, 1971.
5. U.S. Bureau of Labor Statistics, *Directory of National Unions and Employee Associations*, 1971 in *Statistical Abstract of the U.S.,* 1982.
6. Report on Economic Freedom, http://freedom.clemson.edu.
7. Small Business and Entrepreneurship Council, 2003 ranking, http://www.sbsc.org/Media/pdf/SBSI2003.pdf.
8. Ranking by the Better Government Association as reported in the Corporate Crime Reporter, 2004.

government employees, and to fall with the share of state government workers.[10] We also find a positive effect of state and local government expenditures per capita on the level of corruption. An increase of one standard deviation in the level of expenditures is associated with about 4 tenths of a standard deviation more corruption, so the magnitude of this effect is less than half of the size of the effect of income inequality or the IV estimate of education. We find no evidence of an effect of government size as measured by the number of state legislatures per capita, the number of local governments per capita (which includes counties, municipalities, townships and special districts) or the share of gross state product that is related to state and local government.

Next we turn to the correlation of corruption with various measure of regulation in the state. The measures we consider are state and local tax revenue relative to personal income, the fraction of unionized workers in total nonagricultural employment, indexes of regulation and general economic freedom published by Clemson University, and a ranking of the environment for entrepreneurship from the Small Business and Entrepreneurship Council. The index of

[10] These shares are measured in 1979 because that is the first year the state/local division of employment is available from the Bureau of Economic Analysis.

regulation includes information on labor regulation, environmental regulation, and regulation in particular industries such as public utilities and insurance. The assessment of general economic freedom includes the measures of regulation and government size mentioned above, as well as many other indicators of government spending, taxation, and the judicial system. It is scaled so that higher values indicate less economic freedom, and consequently a higher degree of regulation. The index of entrepreneurship is a similar index based on various measures of the tax burden, labor, and insurance costs facing small businesses. All three of these indexes are based on data pertaining to the 1990s. Although it would be preferable to measure the degree of regulation during a period prior to our data on corruption, we are unaware of any similar indexes for earlier time periods.

Although the coefficient estimates are generally consistent with a positive correlation between regulation and the level of corruption, the effects are all small and imprecisely estimated. In no case do we estimate an effect that corresponds to more than 2 tenths of a standard deviation change in the level of corruption for a 1 standard deviation change in the independent variable.

Finally, we estimate the effect of state-level laws that are specifically designed to limit corruption. In particular, we use a state ranking of integrity created by the Better Government Association, which takes into account freedom of information laws, whistleblower protection laws, campaign finance laws, gifts, trips and honoraria laws, and conflict of interest laws. This ranking is reported by the Corporate Crime Reporter (2004). States with stricter anti-corruption laws have a lower conviction rate, which suggests that these laws appear to dampen corruption.

Overall, the results on government only weakly support the view that bigger governments or governments with more regulation are more corrupt. However, if people in more corrupt states are more opposed to bigger government, there would be a simultaneity bias in these OLS coefficient estimates.

The relationship between local government institutions and the level of corruption has been the focus of several other researchers who have used these data on state corruption convictions. Fisman and Gatti (2002) also find no meaningful relationship between government size and corruption. On the other hand, Goel and Nelson (1998) find that state and local expenditures increase corruption after controlling for police expenditures and other factors that deter corruption. Besides examining the effect of government size, Fisman and Gatti find that state corruption convictions are positively related to the amount of federal transfers. They interpret this result as suggesting that a decentralized government is less corrupt. An alternative interpretation is that states with poorer fiscal policy, and therefore higher expenditures compared with revenues, have an environment that is conducive to corrupt practices. Using a survey of state political reporters, Alt and Lassen (2003) find that states with greater political competition (as measured by open primaries and campaign expenditure restrictions) are associated with less corruption. Combining our results with this other research, we conclude that endogeneity problems and small sample sizes make any effect of government on corruption difficult to assess. An important direction of future work should be to develop more credible identification strategies to explore this relationship further.

4. Does corruption impact state growth

In this section, we ask whether growth is slower in states with more corruption convictions. The most obvious measure of economic activity in a state is the estimates of Gross State Product published by the Bureau of Economic Analysis. Following the literature on local economic

growth (e.g. Glaeser and Saiz, 2004), we also examine total employment, income and housing values as measures local development. To minimize concerns about endogeneity, we calculate the growth rates of each of these variables between the years 1980 and 2000 and consider the effect of average corruption between 1976 and 1980. Our basic specification is:

$$\text{Log}\left(\frac{\text{Outcome in 2000}}{\text{Outcome in 1980}}\right) = \alpha + \beta \bullet \text{ Conviction Rate}_{1976-1980} + \gamma \bullet \text{ State Characteristics}_{1980} \quad (2)$$

where "Outcome in 2000" and "Outcome in 1980" refers to the levels of gross state product, employment, income, and median housing values in each of those years. We are interested in the estimate of β, the relationship between corruption and growth over this time period. In all

Table 6
Relationship between corruption 1976–80 and economic growth 1980–2000

	Gross state product		Median household income		Employment		Median house value	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corruption 1976–80	−.641*	.032	−.221**	−.108	−.124	.249	−.126	−.256
	(.360)	(.332)	(.106)	(.102)	(.196)	(.234)	(.199)	(.216)
Ln(Gross state product)	.048	−.390						
	(.039)	(.304)						
Ln(Income)		−.974	−.074	−.646**		−.937**		−.373
		(.826)	(.089)	(.124)		(.300)		(.291)
Ln(Employment)					.006	.397		
					(.022)	(.325)		
Ln(House Value)							−.021	−.326**
							(.108)	(.159)
South	.058	.018	.062*	.055	−.115*	−.076	.073	−.074
	(.105)	(.122)	(.035)	(.037)	(.059)	(.082)	(.076)	(.083)
Northeast	.074	−.176	.134**	.102**	−.224**	−.304**	.221**	.126**
	(.115)	(.105)	(.034)	(.031)	(.064)	(.071)	(.069)	(.069)
Midwest	−.125	.107	.022	.070**	−.212**	−.189**	.003	−.062
	(.107)	(.104)	(.032)	(.030)	(.060)	(.069)	(.072)	(.072)
Share with 4+ years of college		3.40*		1.97**		1.03		1.57
		(1.73)		(.527)		(1.24)		(1.08)
Share black		.796		.355**		.172		.656**
		(.560)		(.166)		(.374)		(.340)
Income inequality		−7.83		−2.67**		−6.05**		−3.66*
		(4.80)		(.958)		(2.23)		(1.98)
Share gov. employment		−1.69		.112		−.394		.854
		(1.24)		(.377)		(.865)		(.778)
Ln(Population)		.347		.001		−.411		.038
		(.292)		(.013)		(.314)		(.027)
Share urban		.828**		.200**		.425**		.352**
		(.268)		(.071)		(.161)		(.156)
Constant	.816	12.6	.813	7.24**	.444	12.6**	.331	7.93**
	(.394)	(10.9)	(.920)	(1.47)	(.300)	(3.60)	(1.24)	(3.02)
Adj. R^2	.03	.49	.25	.58	.22	.35	.17	.44
# Obs.	50	50	50	50	50	50	50	50

Note. Except for the corruption rate, all independent variables are measured in 1980. Gross state product and total employment are from the Bureau of Economic Analysis. Income is median household income from the 1980 Census, and housing values are the median value in the 1980 Census.

specifications, we include initial values of the dependent variable and region dummy variables.

In the first regression of Table 6, we find that states with more corruption convictions experienced slower growth in total output during the past two decades. An increase in corruption of one standard deviation would lead to a decline in economic activity of about one quarter of a standard deviation. However, this effect is not robust to including a group of other control variables that are likely to be correlated with both corruption and economic growth. We find a negative effect of corruption on median household income that is similar in magnitude (columns 3 and 4), while the effects on employment and housing values are substantially smaller.[11] Controlling for other variables again reduces our confidence of any relationship between corruption and economic growth. Although it is important to control for levels of education and ethnic fractionalization because they are likely to have an independent effect on economic growth, these specifications are likely to be biased due to the impact of these variables on corruption. In order to test the effect of corruption on growth more definitively, a useful direction of further research would be to explore other historical determinants of corruption that are otherwise unrelated to economic growth.

Although we are unaware of any other studies that have used these conviction data to analyze the effect of corruption on economic growth, Berkowitz and Clay (2004) control for corruption in a related analysis of the effect of legal institutions on economic growth. They find that higher corruption is associated with a lower level of income and higher poverty rates in 2001. This evidence is consistent with the theory that corruption deters growth, but it is based on cross-sectional differences in income rather than direct evidence on economic growth. Overall, we conclude that there is only weak evidence that corruption limits economic activity in the US states. Are these results weaker than the cross-country evidence? If so, why?

5. Conclusion

In this paper, we have examined the causes of consequences of corruption using data on corruption convictions across U.S. states. This analysis supplements the international evidence on corruption, and we have found that many of the basic patterns that hold for countries hold for states as well. We find relatively strong evidence that states with higher levels of education are less corrupt, while ethnic and income heterogeneity appear to encourage corrupt practices. Support for a negative impact of income and the size of local government is weaker, and we find no evidence that the degree of regulation leads to higher levels of corruption. There is a modest negative connection between corruption and state economic growth, but this effect disappears once we control for a rich enough set of covariates.

While the cross-state variation we use in this paper provides a useful complement to the international evidence, there is much greater heterogeneity in both the degree of corruption and economic outcomes across countries. A greater similarity across states and smaller sample size makes the determinants and effects of corruption harder to identify in the context of the US states. Nevertheless, we find evidence consistent with many of the major theories that have been tested with international data. The similarity of these results with the international

[11] The similarity of the results based on gross state product and median household income are not surprising, and the gross state product data are based on total income measures in the state.

evidence is particularly interesting given that we define corruption based on Federal conviction data rather than the type of opinion survey that is the norm in the cross-country literature. We interpret these findings as support for the validity of both ways of measuring corruption.

Our results are also consistent with the view put forth in Glaeser et al. (2004) that development improves political institutions, rather than political institutions determining development. By the term "political institutions," we mean a set of rules or procedures that constrain the behavior of participants in the government or political process (North, 1981). High degrees of corruption are a sign of weak political institutions, as government officials are able to take actions that lead to personal gain instead of promoting the welfare of the state. Although convictions for corrupt practices do not provide evidence on particular institutions per se, activities such as taking bribes and tampering with election results indicate that the constraints on political activity are not strong enough to prevent such behavior. We find that historical levels of education and income predict the level of corruption today, suggesting that political institutions are weaker in states with populations that are poorer and less educated. In contrast, the connection between corruption and current economic development is not as evident. Thus, this aspect of the quality of political institutions appears to be a function of the level economic development, rather than vice-versa.

If higher levels of income and education increase the public's awareness of public officials' misdeeds, then our results can be interpreted as evidence that the costs of corruption (as influenced through the probability of being caught) matter more than the potential gains (as measured by the size of government or the number of government regulations that can be circumvented through bribery). Ethnic fragmentation also decreases the cost of corruption by creating an incentive to keep certain public officials in power, even if they are known to be corrupt. Therefore, our evidence is consistent with the view that the behavior of government officials is more strongly motivated by the potential costs than by larger rewards. This interpretation implies that models of political agency and the behavior of public officials should focus on the incentives to avoid negative consequences rather than on the benefits of certain actions.

Finally, our analysis adds a useful insight into the determinants of the quality of government institutions. Our results reinforce the view that low levels of educational attainment can encourage corruption, which is yet another detrimental aspect of having a less educated population. A reduction in corruption is also an additional benefit of a society with low levels of racial and socio-economic fragmentation. Moreover, if corrupt practices lead to less investment in human capital, the negative impact of low education levels can be self-reinforcing. This feedback effect should provide additional impetus to policy makers to be concerned about corruption in political institutions. Controlling for the effects of education and socio-economic heterogeneity, the absence of a strong relationship between corruption and other government institutional characteristics suggests that corrupt practices can surface in multiple types and sizes of government institutions.

Acknowledgment

Both authors thank the Taubman Center for State and Local Government for financial support. Conversations with Claudia Goldin and Andrei Shleifer helped form our understanding of this topic. We thank Robert McCormick for kindly providing data on economic freedom across states.

Appendix A

Table A.1
Convictions by State

	Corruption rate	Average convictions per year 1976–2002	Average population 1976–2000
Alaska	0.643	3.44	535,716
Mississippi	0.612	16.12	2,636,195
Louisiana	0.513	22.15	4,314,021
South Dakota	0.472	3.37	713,422
Tennessee	0.464	23.18	4,993,703
Illinois	0.458	53.75	11,727,133
New York	0.439	79.69	18,170,146
Oklahoma	0.415	13.34	3,218,352
Montana	0.414	3.44	832,262
North Dakota	0.398	2.59	651,678
Alabama	0.397	16.29	4,107,121
South Carolina	0.382	13.37	3,500,994
Georgia	0.373	24.60	6,591,743
Florida	0.368	46.56	12,651,066
Pennsylvania	0.361	43.36	12,003,643
Ohio	0.341	37.44	10,978,266
Kentucky	0.333	12.59	3,777,920
Virginia	0.329	20.19	6,142,573
Hawaii	0.295	3.22	1,092,079
West Virginia	0.290	5.40	1,859,127
New Jersey	0.273	21.36	7,812,665
Delaware	0.269	1.81	674,084
New Mexico	0.263	4.04	1,536,544
Rhode Island	0.253	2.52	996,282
Missouri	0.248	12.81	5,177,338
Massachusetts	0.240	14.42	6,006,227
California	0.232	66.52	28,662,236
Maryland	0.230	10.85	4,727,153
Idaho	0.229	2.44	1,069,269
Wyoming	0.226	1.07	475,465
Maine	0.225	2.70	1,199,871
Nevada	0.222	2.81	1,266,741
Connecticut	0.221	7.19	3,255,780
Texas	0.209	35.92	17,196,530
Kansas	0.196	4.89	2,499,103
Indiana	0.190	10.78	5,665,196
Michigan	0.181	17.07	9,429,166
Arkansas	0.179	4.33	2,416,578
North Carolina	0.170	11.47	6,754,074
Arizona	0.158	5.89	3,731,811
Colorado	0.151	5.21	3,456,802
Wisconsin	0.150	7.44	4,952,719
Nebraska	0.133	2.15	1,616,196
Utah	0.130	2.31	1,782,645
Iowa	0.127	3.63	2,865,230
New Hampshire	0.125	1.33	1,069,154
Minnesota	0.121	5.34	4,412,038
Vermont	0.115	0.64	554,903
Washington	0.104	5.08	4,870,211
Oregon	0.074	2.15	2,912,978

Table A.2
First-stage regressions for IV regressions in Table 2

	Column 4	Column 5	Column 6	
	Ln(Income) in 1970	Share 4+ years of college	Ln(Income) in 1970	Share 4+ years of college
Ln(Income) in 1940	.087** (.029)		.091** (.028)	.003 (.006)
Longitude	−.031* (.017)		−.012 (.018)	.004 (.004)
Longitude^2	.0002* (.0001)		.0001 (.0001)	−.00002 (.00002)
Latitude	.030 (.032)		.051 (.033)	.007 (.007)
Latitude^2	−.0003 (.0004)		−.0005 (.0004)	−.0001 (.0001)
Share congregationalist church members in 1890		.234** (.059)	.744** (.306)	.250** (.062)
Ln(Population)	−.001 (.014)	.0004 (.0028)	.007 (.014)	.002 (.003)
Share gov. employment	.045 (.370)	.174** (.070)	.232 (.383)	.190** (.078)
Share urban	.527** (.124)	.096** (.019)	.589** (.125)	.102** (.025)
South	−.036 (.080)	−.010 (.007)	.012 (.095)	−.007 (.019)
Northeast	−.100 (.102)	−.018** (.008)	−.109 (.111)	−.031 (.022)
Midwest	.059 (.076)	−.015** (.007)	.045 (.078)	−.027* (.016)
Constant	10.1** (1.16)	.008 (.042)	8.43** (1.32)	−.373 (.268)
# Obs	48	45	45	45

Table A.3
First-stage regressions for IV regressions in Table 3

	Column 4	Column 5	Column 6	
	Ln(Income) in 1970	Share 4+ years of College	Ln(Income) in 1970	Share 4+ years of College
Ln(Income) in 1940	.174** (.024)		.182** (.025)	.019** (.004)
Longitude	.017* (.016)		.029 (.019)	.003 (.003)
Longitude^2	−.0001 (.0001)		−.0001 (.0001)	−.00001 (.00002)
Latitude	.045 (.045)		.051 (.046)	.005 (.007)
Latitude^2	−.0004 (.0006)		−.0006 (.0006)	−.00008 (.00010)
Share congregationalist church members in 1890		.119* (.063)	.444 (.391)	.154** (.063)
Corruption rate 1976–80	−.093 (.146)	−.036 (.030)	−.018 (.166)	−.024 (.027)
Share gov. employment	.072 (.403)	.199** (.086)	.332 (.462)	.277** (.074)
Constant	7.23** (1.13)	.068** (.018)	6.42** (1.29)	−.284 (.209)
# Obs	48	45	45	45

Appendix B. Data Appendix

Congregationalist church membership: Number of congregationalist church members relative to total church membership, as reported in the 1890 Census. Data are reported in ICPSR data file #0003.

Corruption rate: Number of convictions of public officials for public corruption 1976–2002 relative to average population in the state 1976–2002. Conviction data are from the 1989, 1999 and 2002 issues of the *Report to Congress on the activities and operations of the Public Integrity Section*, issued by the Department of Justice. Missing values (3.2% of the state-year observations) are imputed using the average number of convictions in the surrounding 5-year period. Population data are annual estimates from the Bureau of Economic Analysis.

Education: Share of the population aged 25 and up with four or more years of college, as reported in the 1970 Census.

Gross state product: State and local and total gross state product are the 1977 values reported by the Bureau of Economic Analysis (the first year these data are available).

Government employment: Share of government employment is the number of government employees relative to total employment, as reported in the 1970 Census. State and local government employment are the 1970 values reported by the Bureau of Economic Analysis.

Income: Income in 1970 is median household income from the 1970 Census. Values for 1940 are the median family wage and salary income from the 1940 Census, calculated from the IPUMS microdata files.

Income inequality: Gini coefficients for family income in the 1970 Census and household income in the 1980 Census (used in Table 6 growth regressions). Reported at http://www.census.gov/hhes/income/histinc/state/state4.html by the US Census Bureau.

Integrity index: State ranking by the Better Government Association, as reported by the Corporate Crime Reporter, 2004. Ranking includes information on state laws pertaining to freedom of information laws, whistleblower protection laws, campaign finance laws, gifts, trips and honoraria laws, and conflict of interest laws.

Local governments: Number of local governments (counties, municipalities, townships and special districts) from the 1972 Census of Governments, reported in the 1974 edition of the *Statistical Abstract of the U.S.*, table 399.

Racial heterogeneity: Dissimilarity index $= 1 - \sum s_i^2$, where s_i is the population share of group i. The index for 1970 is calculated from the population shares of Whites, Blacks, and other races from the 1970 Census. The index for 1980 is calculated from the population shares of White (non-Hispanic), Black (non-Hispanic), Hispanic, Asian, Native American, and other races.

Regulation and economic freedom indexes: Economic freedom index published in 1999 by Clemson University, http://freedom.clemson.edu. Most data used to create the index pertain to the 1990s. Regulation index (a component of the overall economic freedom index) was provided by Robert McCormick.

Small business survival index: State ranking in 2003 published by the Small Business and Entrepreneurship Council, http://www.sbsc.org/Media/pdf/SBSI2003.pdf.

State legislators per capita: Total number of seats in the upper and lower house in 1970 relative to population in 1970. Governmental Affairs Institute, *America Votes*. Reported in the 1971 edition of the *Statistical Abstract of the U.S*, table 563. Population data are from the Bureau of Economic Analysis.

Tax Revenue: State and local tax revenue per $1000 of personal income in 1970. U.S. Bureau of the Census, *Governmental Finances in 1969–70.* Reported in the 1972 edition of the *Statistical Abstract of the U.S.*, table 661.

Unionized workers: Labor organization membership relative to total nonagricultural employment in 1970. Reported in the 1982–3 edition of the *Statistical Abstract of the U.S.*, table 682.

Urban population: Urban population relative to total population in the state in 1970, 1970 Census data reported in the 1971 edition of the *Statistical Abstract of the U.S.*, table 17.

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