Decentralization and Corruption:
Evidence Across Countries[?]

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Abstract

The relationship between decentralization of government activities and the extent of rent extraction by private parties is an important element in the recent debate on institutional design. The theoretical literature makes ambiguous predictions about this relationship, and it has remained virtually unexamined by empiricists. In this paper, we make a first attempt at examining this issue empirically, by looking at the cross-country relationship between fiscal decentralization and corruption as measured by a number of different indices. Our estimates suggest a strong negative relationship between fiscal decentralization in government expenditure and corruption. Moreover, we find that legal origin performs extremely well as an instrument for decentralization. When instrumenting in this way, the estimated relationship between decentralization and corruption is even stronger.

In recent years, there has been considerable debate on the merits of government decentralization. Those in favor of devolving powers of revenue collection and expenditure to local authorities have been guided to a large extent by the rationale, first expressed by Tiebout (1956), that decentralization leads to greater variety in the provision of public goods, which are tailored to better suit local populations. On the other side, Tanzi (1996) has argued that there exist many imperfections in the local provision of services that may prevent the realization of benefits from decentralization. For example, local bureaucrats may be poorly trained and thus inefficient in delivering public goods and services.

More recently, however, Besley and Coate (1999) have shown that there is relatively little theoretical support for claims of differential provision of services. Hence, they assert, decentralization must be justified by political economy explanations. One such possibility, which has received much attention, is that accountability of bureaucrats may differ between centralized and decentralized systems.

Recent studies have come down on opposite sides of this issue: for example, Wade (1997) suggests that India's overcentralized top-down structure was largely responsible for corruption in the irrigation bureaucracy. In contrast, Brueckner (1999) claims that corruption is more likely to be a problem among local governments. By far the most comprehensive theoretical examination of these issues comes from Bardhan and Mookherjee (1998). They argue that a centralized bureaucracy creates incentives to divert resources to the nonpoor, owing to their willingness to pay bribes. This effect is traded off against the vulnerability of local governments to 'capture' by the local wealthy, who seek to appropriate the lion's share of local supply. In general, they find that the relationship between decentralization and the extent of rent extraction by private parties is ambiguous.

Thus, while there is a sense that decentralization and government corruption are closely linked, there is much disagreement on what the net relationship between them should be. Hence, this is primarily an empirical question, which has gone almost completely unaddressed until now. The only previous work that, to our knowledge, looks at this issue is by Huther and Shah (1998), who note the negative correlation between corruption and decentralization. However, they look only at the unconditional correlation between fiscal decentralization and corruption. There are many factors that would obviously be highly correlated with both variables: in particular, income is highly correlated with 'quality of governance', however measured, and is also strongly correlated with decentralization (it is well known that development is generally accompanied by decentralization). Hence, problems of omitted variable bias would be extreme in such an analysis.

In this paper, we make a first attempt at systematically examining this issue empirically, by looking at the cross-country relationship between fiscal decentralization and corruption. We find that fiscal decentralization in government expenditure is consistently associated with lower measured corruption. This result is highly statistically significant, and robust to a wide range of specifications, including all of those that have been used in the recent cross-country literature on corruption. Moreover, we find legal origin to be an extremely good instrument for the extent of government decentralization, and our results suggest an even stronger effect of decentralization on corruption when instrumented for in this way.

The rest of this paper is organized as follows: Section I describes the variables used in our analyses. In Section II, we provide regression results on the relationship between corruption and decentralization, using country-level data, and Section III concludes.

II. Cross-country evidence

II.a Data description

The data for our test are drawn from a wide range of sources. The Appendix provides a detailed description of the variables and their sources.

As our principal measure of corruption, we use the *International Country Risk Guide*'s corruption index (*CORRUPT*); this is the measure that has been most commonly used in previous work in the economics literature. This variable is meant to capture the likelihood that high government officials will demand special payments, and the extent to which illegal payments are expected throughout lower levels of government (see Knack and Keefer, 1995). In addition to allowing for consistency with previous studies, *CORRUPT* has the advantage of having the broadest coverage of countries, which maximizes our sample size. For simplicity and ease of exposition, we have rescaled this and all other corruption indices to take on values between zero (least corrupt) and one (most corrupt).

Our measure of decentralization (DECENTR) is given by the subnational share of total government spending.   The numerator of this measure is the total expenditure of subnational (state and local) governments, while the denominator is total spending by all levels (state, local, and central) of government. Our data for these calculations come from the International Monetary Fund's *Government Finance Statistics* (GFS), for the years 1980-95.

In order to minimize possible omitted variable bias on the coefficient of our measure of decentralization, we include in our basic regression a number of controls that are standard in the cross-country empirical literature on corruption.

In addition to controlling for the level of economic development, we include in the regression an index of civil liberties to capture the extent to which free press and free political associations might act as a check on a corrupted public sector. The index of civil liberties was first developed by Gastil and ranges from 1 (most freedom) to 7 (least freedom).

Country size is also an important source of potential spurious correlation. If large countries exploit economies of scale in the provision of public services (Alesina and Wacziarg 1997), and therefore have a low ratio of public service outlets per population, individuals might revert to bribes "to get ahead of the queue". At the same time, larger countries might adopt more decentralized fiscal systems to better cater to the diverse preferences of their citizens. To control for these effects, we include in the regression the (natural) logarithm of population. Alternatively, we include in the regression a measure of the size of government as proxied by total government expenditure as a fraction of GDP.

A number of other variables have been shown to be important explanatory variables in corruption regressions. We run specifications including the share of import on GDP to proxy for openness to trade (*OPEN*) as suggested by Ades and di Tella (1997) and Gatti (1999), and ethnic fractionalization (*ETHNIC*) as pointed out by Mauro (1995) and Shleifer and Vishny (1993). Finally, we include specifications with regional dummies and colonial dummies.

While many of our variables have annual observations, there is relatively little within-country variation. Hence, in our analyses, we use average values of all of our

variables for 1980-95 (the period during which we have observations on corruption).[1] Table 1 reports sample of means of the relevant variables.

II.b Empirical results

Our basic specification is:

$$CORRUPT_i = a + b_1*DECENTR_i + b_2*log(GDP_i) + b_3*CIVIL_i + b_4*log(POP_i) + e_i$$

Table 2 reports coefficients from OLS estimation on data from a cross section of 57 countries. Significance of the estimates is based on White-corrected standard errors.

Our measure of decentralization enters the regression with a negative and strongly significant sign, indicating that countries with more decentralized expenditure have better corruption ratings. The size of the coefficient implies that a one standard deviation increase in decentralization will be associated with an improvement in the country's corruption rating of 40 percent of a standard deviation.

Results reported in columns 2 to 6 highlight that the inclusion of the many controls modifies the slope of the relationship only marginally and does not affect its significance.

In order to further test the robustness of our results, we employ two other corruption indices that are commonly used in the economics literature. These include the so-called German Exporter corruption index (GCI), developed by Peter Neumann (1994), and the *World Competitiveness Report*'s corruption index (WCRCI); see the Appendix for descriptions of these variables. With WCRCI as our dependent variable, we obtained results that were similar to those reported above, in terms of both the significance and magnitude of the effect of DECENTR. When GCI was used, the coefficient on

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[1] For our data on fiscal decentralization, there were many missing observations; a country is included in our

decentralization was somewhat smaller, and its size and statistical significance were much more sensitive to the choice of specification. Table 3 reports the estimated coefficients and t-statistics.

It may be argued that our estimates suffer from for endogeneity bias. For example, corrupt officials of the central government might be reluctant to allow fiscal decentralization, as this would attenuate their ability to extract rents. A more subtle argument for the existence of endogeneity relates to the composition of public spending: different spending programs may have different potentials for rent extraction. If this is the case, corrupt governments may lobby to keep administration of activities with high rent extraction potential (say defense programs) at the center, while decentralizing activities with low rent extraction potential (say education activities).

To correct for potential endogeneity bias, we instrument for the decentralization index with the dummy variables indicating the legal origin of a country introduced by La Porta et al. (1998). There is good reason to expect legal origin to perform well as an instrument for decentralization in a regression involving corruption. Legal scholars have noted the 'affinity' of a Civil (as opposed to Common) legal code for government centralization, since the Civil law system emphasizes the need to conform to the constraints of statutes laid down by (federal) legislators (see Glos, 1978)[2]. Consistent with this, in our data, we find that the proportion of public expenditures accounted for by state/local governments is

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analyses as long as data were available for at least one year during the period 1980-95.

[2] Obviously, there are many subtleties to this argument; in the interests of space, we defer to the listed citation for details. Furthermore, there is some variation within the types of Civil code that is relevant for our argument. In particular, the German legal heritage has a greater propensity for decentralization than the French system. Once again, we obtain results in our data that are consistent with this prediction.

much higher in French origin (Civil system) countries than in British origin (Common system) countries (0.12 vs. 0.21).

The second condition for our instrument to be valid is that legal origin primarily affects corruption through its influence on centralization. Work by La Porta et al. (1998) would seem to bring this into question, as they claim that legal origin influences capital market development through its relationship to the extent of investor rights. While not directly addressing the issue of corruption, their argument suggests that legal origin may have an important effect on property rights that would surely affect, in turn, corruption. Note, however, that their claims have been disputed recently in work (concurrent with our own) by Rajan and Zingales (1999), who claim that legal origin impacts financial development primarily through its effect on government centralization. Their argument is, therefore, consistent with our use of legal origin as an instrument here.

Furthermore, beyond the institutional justification for legal origin as an instrument, the set of legal origin dummies perform remarkably well from a statistical perspective. As shown by the F-test statistic on the joint significance in the first stage regression, the legal origin dummies are good predictors of the degree of decentralization. The over-identifying restriction test (reported in table 4) also indicates very decisively that we cannot reject the hypothesis of no correlation between the instruments and the error in the regression of interest. The legal origin dummies are therefore valid instruments. The estimates from the two-step procedure confirm our findings from OLS estimation: a higher degree of decentralization is associated with lower measured corruption for the ICRG, the GCI, and the WCRCI indices.

III. Conclusions

In this paper, we have made an initial assessment of the relationship between decentralization and corruption. While theories of decentralization make ambiguous predictions about this relationship, we find a very strong and consistent negative association between the two variables across a sample of countries. This association is robust to controlling for a wide rage of potential sources of omitted variable bias as well as endogeneity bias.

Although data availability limits the conclusiveness of our results, the evidence in the paper raises a number of interesting issues for investigation. Among these, whether there are particular services where decentralized provision has a particularly strong impact on political rent-extraction, and understanding the channels through which decentralization succeeds in keeping corruption in check. We leave these questions open for further research.

Data Description

CORRUPTION   Corruption index, rescaled from 0 to 1 (0=lower corruption). Source: International Country Risk Guide, years 1982-90. Higher scores indicate that high government officials are likely to demand special payments and that illegal payments are generally expected throughout lower levels of government in the form of bribes connected with import and export licences, exchange controls, tax assessment, policy protection, or loans.

DECENTRALIZATION   Total expenditure of subnational (state and local) governments over total spending by all levels (state, local, and central) of government. Source: *Government Finance Statistics* (GFS), International Monetary Fund, for the years 1980-95.

FRACTIONALIZATION   Ethnolinguistic fractionalization index (measures the probability that two randomly selected persons from a given country will not belong to the same ethnolinguistic group). Source: Mauro, initially from the Atlas Narodov Mira (Department of Geodesy and Cartography of the State Geological Committee of the USSR, Moscow, 1964) and Taylor and Hudson (World Handbook of Political and Social Indicators, 1972).

Ln(GDP)   Natural logarithm of real GDP per capita in constant dollars, chain Index, expressed in international prices, base 1985. Source: Summers-Heston, years 1960-1990.

CIVIL LIBERTIES   Gastil index of civil liberties. Values from 1 to 7, (1=most freedom) are attributed to countries taking into consideration such issues as freedom of press, of political association and trade unions. The index is available for the years 1972-95. Source: Banks.

SCHOOLING   Average years of schooling in the adult population, available for 1960-1990. Source: Barro-Lee (1993).

POPULATION   Source: WDI, World Bank.

GOVERNMENT SIZE   Total government expenditure divided by GDP. Source: Barro (1991), 1980-85.

OPENNESS   Share of imports on GDP. Source: WDI.

LEGAL ORIGIN   Origin of a country's legal system. Source: La Porta et al (1998).

COLONIAL DUMMIES   Indicators of colonial affiliation. Sources: CIA World Factbook.

Alternative Measures of Corruption

GCI   Total proportion of deals involving kickbacks, according to German exporters. Source: Neumann (1994); obtained from Paolo Mauro.

WCRCI   Corruption index from the *World Competitiveness Report*; extent to which improper practices (such as bribing and corruption) prevail in the public sector. Source: obtained from Paolo Mauro.

References

Ades, Alberto and Rafael di Tella (1997). "National Champions and Corruption: Some Unpleasant Interventionist Arithmetic," *The Economic Journal*, July, no.107, pp.1023-1042.

Alesina, Alberto and Romain Wacziarg (1997). "Openness, Country Size and Government," *Journal of Public Economics*, no.69, vol.3. pp. 305-21.

Alfiler, Conception (1986). "The Process of Bureaucratic Corruption in Asia: Emerging Patterns," in Cariño, ed. *Bureaucratic Corruption in Asia: Causes, Consequences, and Controls*, Quezon City, the Phillippines, NMC Press.

Bardhan, Pranab and Dilip Mookherjee (1998). "Expenditure Decentralization and the Delivery of Public Services in Developing Countries," Department of Economics, University of California, Berkeley, mimeo.

Besley, Timothy and Stephen Coate (1999). "Centralized versus Decentralized Provision of Local Public Goods: A Political Economy Analysis," *NBER Working Paper* no. 7084.

Brueckner, Jan (1999). "Fiscal Decentralization in LDCs: The Effects of Local Corruption and Tax Evasion," Department of Economics, University of Illinois at Urbana-Champaign, mimeo.

Central Intelligence Unit, *The World Factbook 1995-96*, Washington: Brassey's.

Gatti, Roberta (1999). "Explaining Corruption: Are Open Countries Less Corrupt?" World Bank, mimeo.

Huther, Jeff and Anwar Shah (1998). "Applying a Simple Measure of Good Governance to the Debate on Fiscal Decentralization," *World Bank Policy Research Working Papers*, no. 1894.

Knack, Stephen and Philip Keefer (1995). "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures," *Economics and Politics*, November, no. 3, pp. 207-27.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny (1998). "The Quality of Government," *Journal of Law, Economics, and Organization*, vol.15 pp.222-279.

Mauro, Paolo (1995). "Corruption and Growth," *Quarterly Journal of Economics*, August, no.110, pp. 681-712.

Shleifer, Andrei and Robert Vishny (1993). "Corruption," *Quarterly Journal of Economics*, August, vol. 108, pp. 599-617.

Tanzi, Vito (1996). "Fiscal Federalism and Efficiency: A Review of Some Efficiency and Macroeconomic Aspects," in M. Bruno and B. Pleskovic, eds., *Annual World Bank Conference on Development Economics 1995*. Washington, D.C.: World Bank.

Tiebout, Charles (1956). "A Pure Theory of Local Expenditures," *Journal of Political Economy*, vol. 64, pp. 416-24.

Van Rijckeghem, Caroline and Beatrice Weder (1997). "Corruption and the Rate of Temptation: Do Low Wages in the Civil Service Cause Corruption?," *IMF Working Paper*, June, WP/97/73.

Wade, Robert (1997). "How Infrastructure Agencies Motivate Staff: Canal Irrigation in India and the Republic of Korea," in *Infrastructure Strategies in East Asia*, Ashoka Mody, ed., World Bank.

Table 1. Summary statistics, cross country data

	Average	Observations	Std Deviation	Minimum	Maximum
Corruption, ICRG index	0.66	58	0.24	0	1
Corruption, World Competitiveness Report	0.43	29	0.31	0	1
Corruption, German exporter index	0.36	43	0.35	0	1
Decentralization index (share of local and/or state expenditure on total government expenditure)	0.20	65	0.14	0.00	0.57
GDP	6685	60	4916	312	17152
Population	39	65	106	0	803
Fractionalization	36	52	28	1	89
Openness	65	55	38	15	200
Civil Liberties	3.10	65	1.63	1.00	6.39
Government Share	0.16	63	0.05	0.07	0.31

All values are averages over 1980-95; in the case of GDP and Population, these are geometric averages.

Table 2. OLS cross country estimates. Dependent variable: Corruption, ICRG index

	OLS					
	(1)	(2)	(3)	(4)	(5)	(6)
Decentralization index	-0.67	-0.65	-0.72	-0.55	-0.47	-0.59
	(-4.9)	(-3.32)	(-4.07)	(-3.97)	(-3.06)	(-4.16)
Log of GDP	-0.074	-0.082	-0.05	-0.077	-0.090	-0.057
	(-2.08)	(-1.7)	(-1.13)	(-2.09)	(-1.66)	(-1.66)
Civil liberties	0.028	0.026	0.038	0.026	0.033	0.029
	(1.55)	(0.84)	(1.37)	(1.36)	(0.91)	(1.39)
Log of population	0.033	0.036	0.010	0.017	0.026	0.026
	(3.02)	(2.57)	(0.57)	(1.3)	(1.86)	(1.88)
Ethnic fractionalization (*1000)		-0.032				
		(-0.02)				
Openness (*1000)			0.15			
			(2.23)			
Government size				1.30		
				(3.46)		
Regional dummies					Yes	
					(P=0.00)	
Colonial dummies control						Yes
						(P=0.00)
N	57	51	54	56	54	57
R^2	0.62	0.64	0.66	0.68	0.74	0.73

t-statistics are in parentheses. Standard errors are corrected for heteroschedasticity. When various dummies are included as controls, p-values for the joint significance of such dummies are reported.

Table 3. OLS Cross Country Estimates. Robustness checks

	Corruption ICRG index	WCRCI	GCI
Decentralization index	-0.67	-1.04	-0.50
	(-4.9)	(-3.6)	(1.53)
Log of GDP	-0.074	-0.20	-0.23
	(-2.08)	(-3.3)	(-3.10)
Civil liberties	0.028	-0.04	-0.036
	(1.55)	(-1.29)	(-0.79)
Log of population	0.033	0.08	0.076
	(3.02)	(2.27)	(2.46)
N	57	29	43
R^2	0.62	0.62	0.52

t-statistics are in parentheses. Standard errors are corrected for heteroschedasticity.

Table 4. Two-Stage Least Squares Cross-Country Estimates

	Absence of corruption ICRG index	WCRCI	GCI
	(1)	(2)	(3)
Decentralization index	-1.12	-1.44	-1.07
	(-4.65)	(-3.41)	(-2.31)
Log of GDP	-0.0052	-0.18	-0.22
	(-1.33)	(-2.19)	(-2.68)
Civil liberties	0.019	-0.062	-0.060
	(0.9)	(-1.58)	(-1.17)
Log of population	0.049	0.098	1.01
	(3.71)	(2.84)	(3.1)
N	57	29	43
F-test statistic for joint significance of instruments in first stage regressions	8.33	8.33	8.33
Over-identifying restrictions test, P-value	0.90	0.82	0.93

Dummies for legal origin of the country are used as instruments for the degree of decentralization of public expenditure.