Federalism's Values and the Value of Federalism

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Abstract

What is it about federal governance that makes it so attractive to economists, political philosophers and legal scholars and is there any evidence that would suggest all this attention is warranted? Proponents see federalism as a means to more efficient public and private economies, as the foundation for increased political participation and democratic stability and as an important check on governmental abuses of personal rights and liberties. This study provides a working definition of federal governance and classifies a sample of 73 countries as either a constitutionally based federal democracy, an administratively based federal democracy, a unitary democracy, a federal dictatorship or a unitary dictatorship. Governance is then related to 11 measures of economic, democratic, and rights performance. Three conclusions follow. First, decentralized policy-making does have a unique contribution to make to a society's ability to enforce property rights, to protect political and civil rights, and then because of such rights protections, to enhance private sector economic performance. Second, while policy decentralization is the key to federalism's strong rights and economic performance and can be achieved within a unitary government by fiat, constitutionally established provincial (or state) governments provide an extra and important protective barrier for policy decentralization. Federal institutions protect policy decentralization, and policy decentralization provides federalism's valued outcomes. Third, federalism needs democracy; there is no evidence that adding policy decentralization or provinces to a dictatorship significantly improves a dictatorship's economic or rights performance. (JEL codes: H11, H77, H70)

1 Introduction

> *If we wish to know the (political and social function of the federal system), we must ask two questions: Whether federalism as such has value(s) and whether (those values) are attainable only through this governmental arrangement . . . . The value of federalism as against the unitary state . . . can be determined solely through an empirical analysis of a given political system.*

Franz Neumann, "Federalism and Freedom: A Critique," *Federalism*, A. W. MacMahon (ed.), 1962, pp. 44–45.

Strategies to stop decentralization are unlikely to succeed, as the pressures for decentralization are beyond government control . . . . (G)overnment should face decentralization armed with lessons from countries that have gone before them.

World Bank, *World Development Report*, 2000, p. 124

The federal state, once the constitutional foundation for only a few western governments, now seems a polity of choice both for emerging democracies and for established states undergoing economic and democratic reforms. After long periods of military dictatorships Argentina, Brazil, South Africa, and the new democracies emerging from the old Soviet Union have each chosen to use a federal form of government. The once dictatorial East Germany has been re-configured as new democratic Länder within the federal republic of Germany. Centralized political systems as different as China, Norway and Sweden are now finding a federal style of governmental decision-making a useful means for implementing economic reforms. The European Union, first begun as simply a trading partnership for coal and steel, is now moving, albeit slowly, towards a more integrated political union founded upon federal principles of governance. Mexico's recent emergence as a truly competitive democracy is arguably a result of a new commitment to a system of shared powers between the central government and lower-tier, provincial or state governments. Even the original and perhaps still strongest federal unions—Australia, Canada and the United States—are today facing significant challenges to their current structure of federal governance: A redefinition of state financing in Australia, addressing the Quebec "question" in Canada, and an invigorated US Supreme Court seeking to limit the powers of Congress over US states. Now is perhaps a good time to stand back to engage a first-order question: *What is it about federal governance that makes it so potentially attractive and is there any evidence that suggests all this attention is warranted?*

Section 2 offers a brief overview of the arguments for federalism from the economic, political science and legal literatures. Proponents from economics see federal governance as a means to efficient public and private sector performance, advocates from political science as a means to political participation and democratic stability and legal scholars as a way to check central government powers and possible abuses of personal rights and liberties.

Section 3 first provides a working definition of federal governance and classifies each of a sample of 73 countries as either a constitutionally based federal democracy, an administratively based federal democracy, a unitary democracy, a federal dictatorship or a unitary dictatorship.

The sample includes all 24 generally recognized federal countries, whether democratic or dictatorial and nine countries I identify as de facto or administratively federal countries. The empirical analysis of Section 3 then seeks to identify the impact of each form of governance on each of the valued federal outcomes. The analysis makes a distinction, now neglected in the empirical literature, between the contribution of federal *political institutions* formally specified in a country's constitution and the contribution of the federal *policy choice* to decentralize or devolve program responsibilities to lower-tier governments or administrative units. Constitutionally based federal governments have independently elected provincial governments and constitutionally specified representation of those provinces in the central government. Administratively based federal governments are formally specified as unitary governments but ones that make significant use of local governments for the implementation of central government policies. For this sample of countries and sample years (1965–2000), I find both constitutionally based and administratively based federal governments outperform unitary governments on many of federalism's valued outcomes but that there is no significant performance difference between the two forms of federalism. It is policy decentralization that is the most important factor contributing to federalism's strong performance. Finally, federalism's strong performance is only observed in democracies. There appears to be no advantage to attaching formal federal institutions to, or in advocating policy decentralization for, dictatorships.

Section 4 looks behind these reduced form results to identify the relative contribution of each of federalism's three institutional features: Provincial governments, central representation and policy decentralization. While policy decentralization is the primary means through which federal governments favorably impact federal values, having constitutionally created and protected provinces with central representation provides an important safeguard for the decentralization decision itself. The primary role of constitutionally specified federal institutions, it appears, is to protect federal policy choices.

2 Federalism's values

Beginning with Plato's argument for the optimal size of political jurisdictions—5040 citizens based on the capacity of a coliseum with adequate acoustics to guarantee all speakers could be heard—almost all great political philosophers in the Western tradition have had something nice to say about federal governance.[1] Aquinas stressed the virtue of

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[1] Beer (1993) provides an encyclopedic overview of the history of political thought on the virtues and vices of federal governance.

specialization but the need for coordination from the top by (divinely) selected "elders". John Milton and James Harrington also valued specialization but preferred that final authority arise from the collective deliberation of the governed. Machiavelli and Montesquieu took matters further preferring small governments for such decisions—perhaps no more than a 1000 residents with similar needs and preferences—but then allowing for negotiated "contracts" or treaties between those governments as group interests, most notably the common defense, required. Adam Smith, John Stuart Mills and Jean-Jacques Rousseau embraced and refined Montesquieu's arguments, preferring majority rule representative government as both the most efficient and participatory means for collective choices by the many small states. Even James Madison, one of the most forceful advocates for a strong central government, saw provinces as an important check against central government abuse of individual rights and liberties and thus essential for a well-run democracy.[2] Contemporary social scientists and political philosophers have been no less enamored.[3] Three categories of valued outcomes have typically been offered throughout this literature as the comparative advantages of federal governance: Economic efficiency, democratic participation and the protection of personal rights and liberties.

2.1 Economic efficiency

Federal governance is argued to promote efficiency in both the public and private sectors of the economy. First, multiple, lower-tier governments allow mobile residents the opportunity to choose a preferred public goods bundle at the lowest cost. Choice through mobility ensures a better matching of citizen preferences to government allocations (Tiebout 1956) and serves as a disciplinary device to limit government inefficiency and corruption (Brennan and Buchanan 1980; Shleifer and Vishny 1993). Even if citizens are not mobile, politically independent provinces may engage in efficiency-enhancing "yardstick competition" as citizens observe what their neighbors are doing and demand comparable service or tax performances from their own elected leaders (Besley and Case 1995).[4] Decentralized governance does not come without its risks, however. Public "goods" with significant interjurisdictional spillovers may be underprovided while public "bads" may

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[2] See Federalist Papers, No. 51 (1982).

[3] Excellent surveys of the contemporary economic, political science and legal literatures on the advantages of federalism can be found in Oates (1999), Weingast (2006) and Friedman (1997), respectively.

[4] It is here that an economist would place the favorable outcome of "policy experimentation and innovation" so often stressed by US courts; see Rubin and Feeley (1994) or Friedman (1997).

be overused; see, for example, Oates (1972). Such local spillovers can be corrected, but efficiently so only if local representatives to the central government do not fall prey to the mis-incentives of "common pool" budgeting of their mutual tax base; see Inman and Fitts (1990) and Besley and Coate (2003). Federalism can contribute to the valued outcome of government efficiency, but it is by no means guaranteed.

Here, I test for the potential ability of federal governance to promote public sector efficiency using two measures of government performance: (i) the average share over our sample period of *Government Consumption* spending in GDP (*GC6589*) measured by the share of total government spending less spending shares for defense, education and social insurance; and (ii) the average ranking during our sample period of each country's government corruption score as provided by *Transparency International* (*TICORRUPT*). Higher values of both variables are meant to reflect *less* efficient government performance.[5]

Federalism is also argued to improve private sector economic performance. Assigning tax and regulatory responsibilities to provinces and local governments checks government's temptation to exploit business investment through confiscatory capital taxes or excessive business regulation; see Weingast (1995). Decentralized provision of public goods may encourage a more efficient allocation of tax burdens over the life cycle, thus promoting higher savings by younger workers and increased domestic capital accumulation; see Brueckner (2006) and Hatfield (2006). Together, tax and spending decentralization encourage foreign and domestic investment, capital accumulation, economic growth and finally higher steady-state incomes. The potential long-run private sector economic benefits of federal institutions and policy decentralization are best measured by the *level* of a country's income in a recent year; see Hall and Jones (1999), Acemoglu, Johnson and Robinson (2004) and Rodrik (2006).[6] For my measure of private sector economic performance, I use the

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[5] The Data Appendix provides the precise definition of each variable as well as the variable's sample mean and standard deviation.

[6] It has proven exceedingly difficult to find persuasive evidence for the effects of political institutions on economic growth. Growth rates are themselves very noisy measures of economic performance often more influenced by outside events—oil crises, world commodity prices—than country fundamentals. Further, as the arguments here for the effects of federalism make clear, institutions work through many economic channels and each channel itself can be a subtle path of influence. I did run growth regressions relating country growth rates from 1965 to 2000 to federal institutions controlling for various country fundamentals (available upon request) but found no significant effect of federal or democratic institutions on growth rates. This conclusion is consistent with the careful analysis in Tavares and Wacziarg (2001). In their work democracy promotes education, which helps growth but stimulates income redistribution and inefficient government spending, which discourage growth. In the end, democracy's impact on growth is very small and slightly negative.

relative ranking of each of the sample country's real output per worker (Y/L) in 1988 as presented in Hall and Jones (1999), where all values are relative to the United States. The US ranking is 1.000 (this sample's top score) while Myanmar has a relative score of 0.029 (this sample's lowest score).

2.2 Democratic participation

Federalism's contribution to democratic participation, first noted by Plato and Aristotle, is in the presumed ability of small polities to encourage public discourse. Modern political theorists have made similar arguments but within the context of representative democracies. Access to politicians is likely to be easier and information about politician's activities more readily available when government is small. With lower costs to participation, participation should increase. Further, if small governments are allocated responsibility for policies of importance, then the benefits of participation are higher too. This too encourages political activity. Federal institutions both create small governments and assign those governments significant policy responsibilities. With low costs and high benefits, political participation whether through voting, organizing or community action should be greater in federal democracies; see Pateman (1970).

The challenge to this argument is the reality of free-rider behavior in political activities. Why should I participate if my single contribution to the final outcome is trivial relative to my costs of participation? One answer is found in the new work on political participation recognizing citizens often identify with wider groups with coincident interests and may feel an ethical obligation to behave in a responsible manner on behalf of the group—that is, what would happen if everyone in my group behaved as I do? From this perspective it can be rational to participate; see Feddersen and Sandroni (2006). Now the relevant environment for the citizen's decision to participate is not one of a thousand or a million of voters, but rather as a "representative" for one of three or four competing reference (interest) groups. This small numbers environment is far more likely to produce citizen political participation; see Palfrey and Rosenthal (1984) and for evidence Coate and Conlin (2004). Since federal provinces with preference sorting is likely to reduce the number of interacting representative groups, we can salvage the original prediction that democratic federalism encourages political participation. I test for empirical validity of this argument by relating federal institutions to each country's average rate of voter turnout in national elections over our sample period (*VOTE*).

Democratic participation, and thus federal institutions in turn, is argued to have another important democratic benefit: Stable governance.

Elections marked by high rates of voluntary political participation confer legitimacy on the winners of those elections. Thus, we should expect the transition from one government to the next to be peaceful and to adhere to the stated rules for the transfer of power; Dahl (1998).[7] I test this secondary hypothesis that federal governments are more stable governments by relating federal institutions to the percent of times over our sample period that a country's schedule transfer of executive authority follows the stated or legal guidelines for such transitions (*LEGALTRAN*).

2.3 Protection of personal rights and liberties

Federalism's final, and for many its finest, virtue is its ability to protect personal rights and liberties: The *economic rights* to own and allocate property, the *political rights* to vote and to speak one's mind and the *civil liberties* of religious expression, privacy and travel. Federal institutions, it is argued, protect these rights and liberties in two ways. First, if a province's majority denies the economic, political or civil liberties of a minority, that minority can move to a more hospitable province; see Rapaczynski (1985). Second, even lacking mobile residents, federal institutions still may provide protection. Under federalism, Madison argued, "the power surrendered by the people is first divided between *two distinct governments*, and then the portion allotted to each, subdivided among distinct and separate departments. Hence, a double security arises to the rights of the people. The different governments will control each other; at the same time that each will be controlled by itself".[8] States "check" the central government and the central government "checks" the states, just as within each tier of government the legislative, executive and judicial branches balance the others' powers.

I measure a country's performance as a protector of personal rights and liberties on two dimensions. First, a country's respect for private economic property is measured by its relative ranking in the Hall and Jones (1999) index of *G*overnment *A*nti-*D*iversion *P*olicies (*GADP*) with the United States receiving the top ranking of 1.000 and Sudan the lowest ranking of 0.308. Second, a country's respect for political and civil liberties is measured by its relative ranking on an index of average scores over our

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[7] Myerson (2006) presents an additional argument for why a federal form of governance might enhance the stability of democracy. In Myerson's model, everyone votes but it is difficult for citizens to identify politicians who are truly honest democrats from those who are despots—i.e. corrupt—in disguise. Intuitively, under federal governance there will always be a supply of potential honest politicians, either because they are truly honest or because they are acting honest in hopes of being elected to national office where they might then act the despot. Either both levels of government are run by honest democrats, or at least one or more of the provinces are.

[8] See Madison (1982), at Federalist No. 51. (Emphases added.)

sample period of the Freedom House's rating of political and civil liberties (POL/CIV).[9] Western democracies typically have a score of 1.000 while dictatorships such as Vietnam (0.145), Myanmar (0.150) and China (0.152) have low scores.

2.4 Is there a cost to federalism?

For all its virtues, federal governance is not without its critics. In particular, scholars with strong redistributive preferences (Musgrave 1959, pp. 179–83) and those who champion efficiency (Stigler 1957) both recognize the potential inability of strongly decentralized governments to achieve socially agreed to norms of equal opportunity or economic fairness. To ensure an equal opportunity for all citizens to "choose a life one has reason to value" Sen (1999 p. 74), government must guarantee sufficient human capital skills and physical health to all its citizens—services Musgrave calls "merit wants", Rawls "primary goods" and Sen "capabilities". Provincial responsibilities for education and health care may lead to an inequitable distribution of these services, however, either because fiscal resources are lacking in poorer provinces or because discrimination occurs in wealthy, elite run provinces (Bardhan and Mookherjee 2000). Even with more equal human capital skills and good health, all citizens are not fully mobile and because of agglomeration economies or the spatial concentration of natural advantages some may have only limited access to income opportunities. The equalization of provincial fiscal resources plus mandates for equal access to education, health care services and job opportunities can correct such inequities, but critics argue central government taxation, resource redistribution and close monitoring of provincial governments will typically be needed. I test for the relative performance of federal governments to provide equal economic opportunities by relating countries' governance structures to their performance in the provision and distribution of education, measured by the average level of educational attainment for those over 25 years of age (YRS/ED) and the ratio female to male educational attainment for those over 25 (EQ/ED) in our sample period, to their performance in the provision of health care, measured by the average life expectancy of citizens in the year 2000 ($LIFEXP$) and to countries' ability to provide equal earnings opportunities, measured by the average value of their Gini coefficients ($GINI$) over our sample years.

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9   The index is specified as $0.5 \cdot [(1/\text{PRscore}) + (1/\text{CRscore})]$, where the PRscore is the country's average score over our sample period for Freedom House's index of political rights and the CRscore is the country's average score over our sample period for Freedom House's index of civil rights. Freedom House scores range from 1 (most liberal) to 7 (most oppressive).

3 Federal governance the value of federalism

To determine the potential contribution of federal institutions to their proposed valued outcomes, I first specify the governance structure for a sample of 73 countries for the sample period 1965–2000 and then relate that structure to each country's proposed measures for federal values. The results here should be viewed as ''reduced form'' results suggestive of the potential for federal institutions broadly defined to generate socially valued outcomes. Section 4 will step behind this reduced form analysis to explore how each of the individual institutions of federalism might interact to contribute to overall outcomes observed here.

3.1 Specifying federal governance

What defines a federal state? The word federalism has its roots in the Latin *foedus* meaning "league", "treaty" or "compact", and in this sense federal has come to represent any form of government, which brings together, in an alliance, constituent governments each of which recognizes the legitimacy of an overarching central government to make decisions on some matters once exclusively the responsibility of the individual member states. William Riker, perhaps political science's most careful scholar of federalism, defines federalism as:

> (A) political organization in which the activities of government are divided between regional governments and a central government in such a way that each kind of government has some activities on which it makes final decisions (Riker 1964, p. 101).

Montesquieu (1977) and Madison (1982) further stressed that, in addition to multiple tiers of government with unique responsibilities, the lower-tier state or provincial governments must also have constitutionally protected representation to the encompassing central government setting national policies.

For this work, governance is defined along each of these three institutional dimensions: Number of provincial governments ($N \geq 2$ for federal; $N = 1$ for unitary), policy assignment for the provision of important government services between central and provincial governments ($A = 1$ for federal; 0 for unitary) and constitutionally protected provincial representation to the central government legislature ($R = 1$ for federal; 0 for unitary). *Federal governments* are defined as having two or more provinces ($N \geq 2$) each with substantive policy responsibilities ($A = 1$) and provincially elected representation in the central legislature ($R = 1$). *Unitary governments* either lack politically independent provincial governments (i.e. N = 1) or, if there are provincial or lower-tier governments, those governments either lack independent policy authority

$(A=0)$ or central government representation $(R=0)$. Federal and unitary governments may be either democratic or dictatorial.

Table 1 classifies each of the 73 countries included in this study as either a federal democracy (denoted $FED/DEM=1$ in the empirical analysis), a unitary democracy with significant policy decentralization called an administratively federal democracy $(AFED/DEM=1)$ a unitary democracy without policy decentralization called simply a unitary democracy $(UNT/DEM=1)$, a federal dictatorship $(FED/DICT=1)$, or a unitary dictatorship $(UNT/DICT=1)$. The 13 countries classified as federal democracies plus the 11 countries classified as federal dictatorships include all the of the world's countries typically classified as federal governments.[10] The nine additional countries I specify here as democratic and administratively federalism are unitary governments $(N=1$ and/or $R=0)$ but with a significant assignment of policy responsibility to lower-tier (provinces, counties, cities) governments $(A=1)$. For purposes of this study, a country qualifies as an administratively federal democracy if it is democratic and if it ranks in the upper half (quartiles III and IV) of the sample on the percent of all government revenues raised by lower-tier (not central) governments averaged over the sample years 1965–2000.[11] It should be noted that each country's revenue share is very stable over the sample period. Constitutionally specified federal democracies $(FED/DEM=1)$ have a mean local revenue share of 0.33 while administratively federal democracies (AFED/DEM) have a mean local revenue share of 0.34. This is in contrast to the mean local revenue share for unitary democracies of 0.12 and for unitary dictatorships of 0.13; see Table 1. Finally, I classify a country as democratic if it is democratic in 2000 and has been classified as democratic for more than half of the 1965–2000 sample period using the definitions of Przeworski et al. (2000) and updating their results. For Przeworski and his colleagues, the key attribute of a democracy is holding regular, openly contested elections for national office where an opposition party can assume office if it wins the election.

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[10] The most detailed compilation of federal governments is found in Griffiths and Nerenberg (2002) in their comprehensive survey, *Handbook of Federal Countries*, 2002. All of the countries that meet my criteria are classified as federal by the Handbook and all of the Handbook's federal countries are included in this study.

[11] I use locally collected revenues as my measure of decentralization under the belief that own revenues carry with them greater local policy discretion. Local expenditures are often dependent upon closely monitored central government grants-in-aid. As it happens, local revenue shares and local expenditure shares are highly correlated in this sample $(\rho=0.81)$ and a ranking of countries by the percent of government expenditures done by lower-tier governments gives the same classification of countries as reported in Table 1.

Table 1 Country classification by political institutions

Country Form of Governance (Date of Independence)	Number of Provinces (N) ($N = 1$ *if* Unitary)	Provincial Representation (R) (Yes = 1; No = 0)	Assignment (A) (% Rev. Local: Quartile)
Federal/Democracy (FED/DEM = 1)	Mean = 20.3	Mean = 1	Mean = 0.33 (III)
Argentina (1816)	23	1	0.47 (IV)
Australia (1901)	7	1	0.21 (III)
Austria (*1800*)	9	1	0.46 (IV)
Belgium (1830)	3	1	0.15 (II)
Brazil (1822)	27	1	0.39 (IV)
Canada (1867)	10	1	0.51 (IV)
Colombia (1832)	27	1	0.26 (III)
Germany (*1800*)	16	1	0.50 (IV)
India (1947)	25	1	0.33 (IV)
Spain (*1800*)	17	1	0.15 (II)
Switzerland (*1800*)	26	1	0.51 (IV)
United States (*1800*)	51	1	0.46 (IV)
Venezuela (1830)	24	1	0.05 (I)
Administrative Federal/Democracy (AFED/DEM = 1)	Mean = 9.6	Mean = 0	Mean = 0.34 (III)
Denmark (1849)	1	0	0.43 (IV)
Finland (1917)	1	0	0.30 (IV)
France (*1800*)	1	0	0.21 (III)
Italy (1861)	22	0	0.20 (III)

Japan (*1800*)	47	0	0.64 (IV)
Netherlands (1815)	11	0	0.21 (III)
Norway (1814)	1	0	0.26 (IV)
Sweden (*1800*)	1	0	0.37 (IV)
Uruguay (1830)	1	0	0.43 (IV)
Unitary/Democracy (UNT/DEM = 1)	Mean = 2.4	Mean = 0	Mean = 0.12 (II)
Bangladesh (1971)	1	0	0.03 (I)
Chile (1818)	1	0	0.12 (II)
Ecuador (1830)	1	0	0.19 (III)
Greece (1829)	1	0	0.21 (III)
Guatemala (1821)	1	0	0.12 (II)
Iceland (1944)	1	0	0.26 (III)
Ireland (1921)	1	0	0.13 (II)
Jamaica (1962)	1	0	0.04 (I)
Luxembourg (1867)	1	0	0.16 (II)
Mauritius (1968)	1	0	0.03 (I)
New Zealand (1907)	1	0	0.09 (I)
Papua New Guinea (1975)	20	0	0.07 (I)
Peru (1821)	1	0	0.11 (I)
Philippines (1935)	1	0	0.09 (I)
Portugal (*1800*)	2	0	0.14 (II)
United Kingdom (*1800*)	4	0	0.18 (II)

(continued)

Table 1 Continued

Country Form of Governance (Date of Independence)	Number of Provinces (N) (N = 1 if Unitary)	Provincial Representation (R) (Yes = 1; No = 0)	Assignment (A) (% Rev. Local: Quartile)
Federal/Dictatorship (FED/DICT = 1)	Mean = 18.6	Mean = 1	Mean = 0.25 (III)
Comoros (1975)	3	1	(NA)
Czechoslovakia (1800)	2	1	(NA)
Ethiopia (1855)	10	1	0.05 (I)
Malaysia (1957)	13	1	0.15 (II)
Mexico (1822)	32	1	0.24 (III)
Nigeria (1960)	37	1	0.55 (IV)
Pakistan (1947)	4	1	0.25 (III)
Russia (1800)	89	1	(NA)
Tanzania (1961)	2	1	(NA)
United Arab Emirates (1971)	7	1	(NA)
Yugoslavia (1921)	6	1	(NA)
Unitary/Dictatorship (UNT/DICT = 1)	Mean = 4.7	Mean = 0.04	Mean = 0.13 (II)
Algeria (1962)	1	0	0.14 (II)
Bolivia (1825)	1	0	0.18 (II)
Botswana (1966)	1	0	0.14 (II)
Bulgaria (1908)	1	0	(NA)
Cameroon (1961)	10	0	0.19 (III)
China (1800)	28	0	0.63 (IV)

Dominican Republic (1844)	1	0	0.05 (I)
El Salvador (1839)	1	0	0.06 (I)
Ghana (1954)	10	0	(NA)
Honduras (1821)	1	0	0.11 (II)
Indonesia (1945)	27	0	0.03 (I)
Korea (1945)	1	0	0.07 (I)
Myanmar (1945)	7	0	(NA)
Nicaragua (1838)	1	0	0.18 (II)
Panama (1903)	1	0	0.13 (II)
Paraguay (1811)	1	0	0.07 (I)
Sierra Leone (1961)	1	0	0.09 (I)
South Africa (1902)	9	1	0.18 (II)
Sudan (1956)	7	0	(NA)
Thailand (1932)	1	0	0.06 (I)
Tunisia (1956)	1	0	0.10 (II)
Vietnam (1954)	1	0	0.10 (II)
Zambia (1964)	1	0	0.03 (I)
Zimbabwe (1980)	1	0	0.13 (II)

Source: See Data Appendix. (NA) indicates the data were not available.

Table 2 presents the simple mean performance along each measure of federal values for each form of governance. On average, government inefficiency is lower and output per worker significantly higher in federal governments than in dictatorships or even in unitary democracies. Democratic participation and the likelihood of an orderly transition between governments are both higher in federal governments as well, particularly so as an improvement over unitary dictatorships. Economic property rights and political and civil rights are higher too in federal democracies. By each of our value measures federal governance appears to deliver on its promised federal outcome. Even on those dimensions where federal governance is typically thought to be counterproductive—educational opportunities, health outcomes and economic opportunities as measured by income equality—federal democracies do best on average. In this first look at least, both constitutional and administratively federal democracies appear to perform very well. It remains to be seen whether this favorable impression withstands more careful scrutiny, testing for statistically significant differences between forms of governance after controlling for other possible causes of valued outcomes.

3.2 Estimation strategy

The formal analysis looks for significant statistical correlations between the five forms of governance and valued federal outcomes using cross-section regressions of averaged outcomes on governance and selected control variables. As there is little variation over time in outcome measures and even less in the governance indicators, panel regressions are inappropriate; valid inferences are only available from the sample's cross-section variation; see Wacziarg (2002). Further, the stability of the governance indicators and the fact that the formal institutions which define governance have been in place in most of our sample countries well before the start of the sample period (1965) gives some confidence that the results will be identifying long-run consequences of what Glaeser et al. (2004) call the "deep" or "permanent" features of the institutional landscape.[12] Identification of governance's impacts on outcomes will be done in

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[12] The variable (A) used to classify countries as administratively federal is potentially endogenous over the sample period, but two facts hopefully minimize concerns. First, $A = 1$ is defined by the percent government revenues raised locally, which is historically very stable for our sample countries, even before our sample years. Thus $A = 1$ or 0 seems to be describing a fundamental attribute of a country's public finances. Second, allocating countries to $A = 1$ classification by its sample quartile rankings remove further, possibly (cross-country) endogenous variation. In this sense, quartile rankings arguably serve as a valid instrument for actual percent revenues raised locally.

Table 2 Values and political institutions (Sample means and standard deviations)

Federal value	Unitary Dictatorship (N = 24)	Federal Dictatorship (N = 11)	Unitary Democracy (N = 16)	Adm. Federal Democracy (N = 9)	Federal Democracy (N = 13)
Public sector (In)efficiency					
GC6589	0.117 (0.067)	0.101 (0.061)	0.107 (0.079)	0.059 (0.026)	0.052 (0.029)
TICORRUPT	6.65 (1.21)	6.92 (1.33)	4.21 (2.55)	2.43 (2.18)	4.20 (2.65)
Private sector efficiency					
Y/L	0.143 (0.093)	0.218 (0.158)	0.390 (0.277)	0.706 (0.157)	0.637 (0.291)
Democratic participation					
VOTE	0.581 (0.144)	0.586 (0.148)	0.674 (0.159)	0.808 (0.072)	0.678 (0.158)
LEGALTRAN	0.834 (0.148)	0.912 (0.127)	0.922 (0.119)	0.984 (0.034)	0.938 (0.103)
Rights and liberties					
GADP	0.523 (0.131)	0.553 (0.114)	0.683 (0.232)	0.906 (0.136)	0.812 (0.177)
POL/CIV	0.219 (0.063)	0.201 (0.037)	0.531 (0.299)	0.780 (0.246)	0.695 (0.159)
Opportunities and fairness					
YRS/ED	3.21 (1.56)	3.94 (1.68)	5.19 (2.63)	7.68 (1.32)	6.93 (2.82)
EQ/ED	0.676 (0.208)	0.597 (0.204)	0.819 (0.208)	0.924 (0.066)	0.872 (0.164)
LIFEXP	61.40 (12.25)	62.13 (13.49)	72.39 (6.90)	78.32 (1.81)	75.28 (4.89)
GINI	44.76 (9.27)	36.89 (9.67)	39.62 (9.18)	29.97 (6.82)	36.10 (10.66)

three steps. Step one tests for the average contribution of democracy, whether unitary or federal, to valued outcomes generally as:

$$Q = \alpha + \boldsymbol{\beta} \cdot \mathbf{X} + \gamma \cdot \mathrm{DEM} + \varepsilon, \qquad (1)$$

where, Q is a single measure of each of the valued federal outcomes, $\mathbf{X}$ is a vector of common controls and DEM ($=\mathrm{UNT/DEM} + \mathrm{AFED/DEM} + \mathrm{FED/DEM}) = 1$ if governance is democratic, whether unitary, administratively federal or constitutionally federal. The average gain in Q of being democratic rather than dictatorial (measured by $\alpha + \boldsymbol{\beta}\cdot\mathbf{X}$) is the estimated coefficient, γ. In step two, I add the additional institutional variable ALLFEDDEM ($= \mathrm{AFED/DEM} + \mathrm{FED/DEM}$) to the analysis as:

$$Q = \alpha + \boldsymbol{\beta} \cdot \mathbf{X} + \gamma \cdot \mathrm{DEM} + \theta \cdot \mathrm{ALLFEDDEM} + \varepsilon, \qquad (2)$$

where, γ continues to measure the average contribution to the valued outcome of democracy above that of a dictatorship ($\alpha + \boldsymbol{\beta}\cdot\mathbf{X}$) and now θ measures the average additional contribution, beyond being a democracy, that federal institutions allow. Finally, step three, provides a full decomposition of the contribution of democratic governance to valued outcomes, estimated as:

$$Q = \alpha + \boldsymbol{\beta} \cdot \mathbf{X} + \mu \cdot \mathrm{UNT/DEM} + \theta \cdot \mathrm{ALLFEDDEM} + \pi \cdot \mathrm{FED/DEM} + \varepsilon, \qquad (3)$$

where, μ measures the unique contribution of unitary democracy, θ measures the average contribution of the two forms of federal governance, and π the additional contribution of being a constitutional federal democracy beyond that which comes from being federal democracy with strongly decentralized policy assignment ($A = 1$). Again we are estimating the contribution of the three democracies above that available with dictatorship ($\alpha + \boldsymbol{\beta}\cdot\mathbf{X}$). The statistical significance of π provides a direct test of the value of adding constitutional protections for lower-tier governments ($N > 1$, $R = 1$) to policy decentralization ($A = 1$) alone.[13]

Knowing if the formal institutions of federalism—provinces and provincial representation to the central government—contribute significantly to the performance of federal governance is important for at least two reasons. First, if π is statistically or quantitatively unimportant, then

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[13] Under this specification, the estimated contribution of unitary democracy to the valued outcome is μ, the estimated contribution of adminstrative federalism is θ and the estimated contribution of constitutionally protected federalism is ($\theta + \pi$). Thus, π measures the "value-added" of having $N > 1$ and $R = 1$. The estimated marginal contributions of governance to outcomes from Equation (3) are identical to those we would have obtained had we run the regression using governance variables UNT/DEM, AFED/DEM and FED/DEM individually, but the specification here gives an easily observed test for the difference between the contributions of AFED/DEM and FED/DEM.

established unitary democracies will be able to achieve most of the substantive benefits of federalism without re-configuring their formal institutions of governance. A policy decision to decentralize, as recently pursued by Sweden, will be sufficient. Second, if π is insignificant, then new democracies can adopt federal or unitary governance solely to maximize the likelihood of a successful democratic transition without worry that the chosen institutions of governance will constrain future valued outcomes. But if π is important, constitutional choices must be made. In this case, knowing the potential contribution of provinces and central representation to valued outcomes—that is, having estimates of π—is a first step towards making these important institutional decisions.[14]

For the initial estimates, two control variables (**X**) are included in each cross-country regression: The absolute value in latitude as measure of the country's distance from the equator (ABSLAT) and the number of years beginning in 1800 that country has been independent of colonial rule (YRS/IND). ABSLAT serves as a control for the country's location and climate and has proven to be an important fundamental determinant of economic growth, incomes and a country's colonial legacies; see Gallup and Sachs (1998) and Acemoglu, Johnson and Robinson (2001). YRS/IND is meant to control for a country's modern experience with alternative institutional structures, allowing for the possibility of finding overtime stable informal strategies to overcome the inefficiencies or inequities of formal, or constitutional, rules; see North (1990). There is a plausible list of additional demographic, legal, political and cultural controls which might be added to each outcome equation and in Section 3.4 subsequently, I test for the sensitivity of the core results to the inclusion of these additional controls. Estimation of each equation is by OLS, equivalent in this case to seemingly unrelated regression (SUR). Coefficient estimates are efficient, therefore.

3.3 Results

Table 3 reports estimates for Equations (1–3) for the impact of governance on each of the seven measures of valued outcomes and for each of the four measures of economic opportunity and fairness thought to be potential costs

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[14] A practical example of such a decision is the current debate in the United States over the efficacy of the US Supreme Court's efforts to weaken the influence of Congress over public policies and to strengthen the role of US states. Rapaczynski (1985) sees value in these efforts as he expects π will be statistically and quantitatively significant in the political and civil rights (POL/CIV) equation. Feeley and Rubin (1994) argue strongly that π is zero in *all* the valued outcome equations and thus the Court's efforts are seriously misplaced. The results here offer some empirical guidance to resolving this debate.

Table 3 Federal values and federal institutions

Valued outcomes	Constant	DEM	ALLFEDDEM	FED/DEM	UNT/DEM	FED/DICT	N	R^2 (Adj)
Public sector (In)efficiency								
GC6589	**0.165 (0.016)***	0.009 (0.017)					65	0.27
GC6589	**0.159 (0.018)***	0.002 (0.002)	−0.002 (0.002)				65	0.28
GC6589	**0.162 (0.017)***		0.001 (0.003)	0.003 (0.003)	0.002 (0.002)		65	0.28
TICORRUPT	**8.25 (0.49)***	**−1.71 (0.46)***					66	0.61
TICORRUPT	**8.23 (0.51)***	**−1.66 (0.53)***	−0.102 (0.568)				66	0.60
TICORRUPT	**8.19 (0.52)***		**−2.01 (0.75)***	0.362 (0.736)	**−1.68 (0.54)***		66	0.60
Private sector efficiency								
Y/L	**−0.086 (0.044)***	**0.205 (0.045)***					69	0.71
Y/L	−0.050 (0.043)	**0.135 (0.048)***	**0.163 (0.053)***				69	0.74
Y/L	−0.058 (0.043)		**0.240 (0.070)***	0.084 (0.068)	**0.131 (0.048)***		69	0.75
Democratic participation								
VOTE	**0.511 (0.035)***	0.053 (0.039)					68	0.33
VOTE	**0.516 (0.038)***	0.045 (0.042)	0.021 (0.047)				68	0.32
VOTE	**0.522 (0.038)***		**0.108 (0.064)***	−0.060 (0.060)	0.049 (0.043)		68	0.32
LEGALTRAN	**0.851 (0.031)***	**0.069 (0.030)***					70	0.27
LEGALTRAN	**0.860 (0.033)***	0.052 (0.035)	0.040 (0.038)				70	0.26
LEGALTRAN	**0.844 (0.034)***		**0.119 (0.053)***	0.001 (0.049)	**0.076 (0.037)***	**0.078 (0.043)***	70	0.29
Rights and liberties								
GADP	**0.371 (0.035)***	**0.128 (0.035)***					72	0.64
GADP	**0.392 (0.038)***	**0.086 (0.039)***	**0.096 (0.044)***				72	0.66
GADP	**0.390 (0.036)***		**0.164 (0.058)***	0.027 (0.057)	**0.085 (0.040)***		72	0.65
POL/CIV	0.054 (0.050)	**0.313 (0.051)***					73	0.63

Rights and liberties

							N	R²
POL/CIV	0.083 (0.051)	**0.255 (0.057)***	**0.133 (0.064)***				73	0.65
POL/CIV	0.079 (0.052)		**0.362 (0.085)***	0.039 (0.084)	**0.253 (0.058)***		73	0.65

Opportunities and Fairness

							N	R²
YRS/ED	**0.977 (0.519)***	**1.22 (0.53)***					64	0.58
YRS/ED	**1.10 (0.57)***	0.933 (0.588)	0.723 (0.643)				64	0.58
YRS/ED	**1.03 (0.058)***		1.21 (0.89)	0.620 (0.808)	0.896 (0.592)		64	0.58
EQ/ED	**0.533 (0.050)***	**0.111 (0.051)***					64	0.34
EQ/ED	**0.531 (0.054)***	**0.113 (0.058)***	−0.006 (0.063)				64	0.33
EQ/ED	**0.536 (0.055)***		0.132 (0.087)	−0.034 (0.079)	**0.115 (0.058)***		64	0.32
LIFEXP	**52.67 (2.13)***	**6.76 (2.22)***					72	0.52
LIFEXP	**52.46 (2.24)***	**7.18 (2.54)***	−0.975 (2.54)				72	0.51
LIFEXP	**52.38 (2.28)***		5.57 (3.76)	0.914 (3.71)	**7.13 (2.57)***		72	0.50
GINI	**48.23 (2.38)***	−2.05 (2.24)					66	0.42
GINI	**47.54 (2.46)***	−0.638 (2.61)	−2.99 (2.83)				66	0.42
GINI	**49.17 (2.49)***		−6.02 (3.64)	−0.032 (3.51)	−2.84 (2.73)	**−6.86 (3.06)***	66	0.45

All regressions include the control variables for the absolute value of the country's latitude and for the number of years since 1800 that the country has been independent (free of colony rule). Both variables are statistically significant at the 0.10 level or better and favorable to the valued outcome in all regressions, except for YRS/IND in the LEGALTRAN and GINI regressions where the estimated effect is marginal negative.

Standard errors within parenthesis. *Values in bold typeface indicates statistical significance at the 0.10 level or better.

from adopting federal governance. The reported results reveal the potential contribution of each institutional structure, now controlling for a country's geography and years of independence and their correlates. ABSLAT and YRS/IND are always positively and significantly correlated with a valued outcome, except for YRS/IND in the LEGALTRAN and GINI regressions where the estimated effects are marginally negative. (ABSLAT AND YRS/IND results are not reported, but available upon request.)

Five general conclusions are evident from the results in Table 3. *First*, from the Equation (1) specification we see moving from dictatorship to democracy is never harmful and is often associated with very significant improvements in valued social outcomes. The coefficient on DEM measures the potential gain over dictatorships. For comparisons, I evaluate the relative improvement from being a democracy for the country with the average values of ABSLAT ($=29°$) and YRS/IND ($=118$ years). The percentage improvement in a performance measure between democracies and dictatorships where the outcome difference is statistically significant is: Twenty-eight percent lower public sector corruption (TICORRUPT), 82% higher output per worker (Y/L), 8% improvement in the rate of legal transitions in executive leadership (LEGALTRAN), 22% improvement in the index of economic property rights (GADP), 116% improvement in the index of political and civil rights and liberties (POL/CIV), 28% increase in the average years of education (YRS/ED), 16% improvement in relative educational opportunity for women (EQ/ED) and 10% greater life expectancy (LIFEXP).[15]

Second, from estimates for Equation (2) in Table 3, we see adding one or more federal institutions significantly improves country performance over that available from being a unitary democracy in three instances: Output per worker (Y/L), protection of economic property rights (GADP), and protection of political rights and civil liberties. Now we can compute the relative improvement in performance from adding federal institutions to a unitary democracy. Again, evaluating relative performance for mean values of ABSLAT and YRS/IND, we find that federal institutions

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[15] Percentage improvements were calculated in two steps: (i) estimate the average performance for a dictatorship evaluated at the mean value of ABSLAT ($=29°$) and YRS/IND ($=118$ years) inclusive of the regression's constant term, and then (ii) add the estimated coefficient for DEM to the computed value for dictatorship to compute the average performance of a democracy. The ratio of democracy to dictatorship performance then gives the percentage improvement. For example, the average dictatorship performance for TICORRUPT is 6.08 and that for democracy is $6.08 - 1.71 = 4.37$. The relative performance is $4.37/6.08 = 0.72$ or a 28% improvement (decline). A simpler procedure, but one which fails to control for ABSLAT and YRS/IND, would be to just add the estimated coefficient for democracy from each equation to the mean value for that outcome measure for either unitary or federal dictatorships from Table 2, and then compute the performance ratio.

generally add an additional 43% to a country's performance in output/
worker (Y/L) above the gains from democracy alone, 13% to democracy's
performance for property rights (GADP) and 25% to democracy's
performance in protecting political and civil rights (POL/CIV).[16] These
results highlight the importance of federal institutions and/or policy
decentralization for rights protection and then the gain that rights
protection offers a society in economic welfare. Section 4 examines these
connections in greater detail.

Third, estimates of Equation (3) in Table 3 reveal the contribution to our
valued outcomes of policy decentralization ($A = 1$) alone relative to being
decentralized *and* having constitutionally established provinces ($N > 1$)
with central representation ($R = 1$). If the variable FED/DEM is positive
and significant along with ALLFEDDEM, then formal institutions
($N > 1$, $R = 1$) strengthen the contribution of policy decentralization.
Table 3 shows FED/DEM is never significant once policy decentralization
has been included in the analysis. This does not mean that federal
institutions are unimportant to federal government performance, however.
In Section 4, we will find that provincial governments play a crucial role in
protecting policy decentralization in democracies. The impact of these
institutions is just one step removed.

Fourth, dividing dictatorships into unitary and federal dictatorships and
re-estimating Equation (3) for all valued outcomes shows the performance
of federal and unitary dictatorships differs for only two outcomes: Federal
dictatorships (FED/DICT = 1; Table 1) have a higher rate of legal
executive transitions (LEGALTRAN) and a significantly lower level of
economic inequality (GINI); Table 3. FED/DICT was insignificant in all
other regressions. It is not unreasonable to think the two significant
reduced form results might be causally connected. Importantly, however,
adding policy decentralization and/or federal institutions to a dictatorship
has no observable consequence for a country's economic efficiency or
rights performance. Much has been said about China's policy decentral-
ization and its recent economic performance (see Jin, Qian and
Weingast, 2005), but there is no evidence here that this story generalizes
to other dictatorships. The results in Table 3 are unaffected if I exclude
China from the sample or if I re-classify China as a federal, rather than a

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[16] In this case, the percentage improvements were evaluated in three steps: (i) estimate the
average performance for the dictatorship at the mean value of ABSLAT and YRS/IND
using estimates from specification for Equation (2); (ii) add to that estimate the
additional impact of DEM from the estimates in Table 3 for Equation (2); and finally
(iii) add to those estimates the added gains from ALLFEDDEM as reported for
Equation (2) in Table 3. The percentage improvements reported here are for the gains
from moving from DEM alone to DEM plus ALLFEDDEM.

unitary, dictatorship. (Results available upon request.) For this sample, it appears that federalism only matters in democracies.

Fifth, the potential costs of federal institutions to economic opportunity (YRS/ED; ED/ED; LIFEXP) or economic fairness (GINI) are not observed in this sample. Federal democracies appear to use central government fiscal policies to equalize economic prospects much as do unitary democracies. Only under dictatorial rule do federal institutions affect fairness, and here the effects are positive. In dictatorships provincial governments may provide a political voice for equalizing economic opportunity (GINI) not found in unitary dictatorships. These results must be interpreted with care, however. They are reduced form estimates, not structural estimates of a constraint-based frontier between possibly competing values of federalism, as conjectured, for example, in Inman and Rubinfeld (1997). We cannot distinguish between the case where there are in fact no trade-offs along a value frontier from the case where outcomes are chosen along federally induced outward shifting value frontiers. That said, however, the results remain encouraging for democratic countries considering decentralized governance.

3.4 Robustness

There are at least three sources of bias that must be addressed before accepting the core results of Table 3: That some countries' governance structures may be misclassified; that important omitted variables may be responsible of the observed correlations between governance institutions and values; and that the causal connection is not from institutions to valued outcomes, as hypothesized by the federalism literature, but rather is from outcomes to institutions. I have evaluated each in turn and summarize the results briefly here.

First, when setting the governance classifications reported in Table 1, I made three judgement calls. Following the decisions of other scholars (Griffiths and Nerenberg 2002), I classified China as a unitary dictatorship rather than a federal dictatorship as characterized by Weingast in his important work on market preserving federalism (Jin, Qian and Weingast 2005). Next, I classified Venezuela as a federal democracy rather than a unitary democracy, despite the fact that its share of government revenues raised locally (only 0.05; Table 1) would better fit my assignment definition for unitary governance. Finally, I did not classify Ecuador, Greece and Iceland as administratively federal democracies, calling each a unitary democracy despite the fact that their shares of government revenues raised locally (0.19, 0.21 and 0.26, respectively; Table 1) do meet my definition of administrative federalism. To be sure that the results in Table 3 were not significantly affected by these choices, I redid the analysis in Table 3 assigning the alternative classification for each country.

The statistical and quantitative importance of governance institutions were unaffected.[17]

Second, bias may arise because an important variable correlated with governance and outcomes is omitted from the list of core controls. The historical and theoretical literature on the emergence of democratic and federal governance suggests six sets of additional controls:[18]

- *Ethnic, religious or language fractionalization* of a country might encourage the adoption of federal governance but at the same time, because of unmeasured latent conflicts, reduce the likelihood of achieving valued outcomes; see Alesina and LaFerrara (2005). If so, the estimated coefficients for ALLFEDDEM or FED/DEM would be biased towards finding no effect of federalism on outcomes. I re-estimated all the equations of Table 3 individually adding Alesina et al.'s (2003) and Fearon's (2003) indices for ethnic, then religious, then language differences to each value equation. The fractionalization indices themselves were occasionally significant—for example, positively impacting economic, political and civil rights as Madison in Federalist No. 10 conjectured—but their inclusion did not significantly affect the estimates in Table 3 for the effects of governance on outcomes.

- A country's *culture* may define the fundamental values or preferences of its citizens which in turn jointly impact a valued outcome and the decision to adopt a particular form of governance. For example, the protestant ethic is seen to foster high savings, high work effort, a commitment to individual rights, and rewards based on merit; see Weber (1958). These values are also seen to foster democratic governance and a tolerance of, if not a preference for, local government; see de Tocqueville (1969; Part I). As a result protestant countries should have strong economic performance and favorable rights performance as well as democratic, and perhaps decentralized, governance. Catholicism's historical emphasis on strong central governance and obedience (Beer 1993), and more recently, democracy and economic equality (Huntington 1991) suggest these countries are more likely to be democratic and unitary as well as more egalitarian. Finally, Muslim societies are seen as strongly centralized and repressive, particular with respect to women's rights; see Landes (1998). In these countries, governance will be dictatorial and outcomes may be less egalitarian and rights and opportunities more restricted. In each instance, omitting a good measure of a country's

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[17] Nor were the results affected by a re-specification of assignment using the share of government expenditures done locally rather than as here the share of government revenues raised locally; see fn. 11 above.

[18] Again the details available upon request.

culture is likely to lead to an overestimate of the effect of democratic and federal governance on favored outcomes. Here, I measure culture by the majority religion in each of my sample countries; countries without a single dominant religion are considered multi-cultural; see La Porta et al. (1999). Culture matters. The Muslim control is significantly negative and the coefficient on DEM, though still positive, becomes statistically insignificant in the YRS/ED and EQ/ED equations. There are no effects of including the cultural controls on the estimated coefficients for ALLFEDDEM and FED/DEM.

- A country's *natural resource endowment*, particularly if geographically concentrated, may lead to significant interregional conflict as, for example, in Nigeria (Suberu 2001); federalism with regional redistribution might mitigate such conflicts (Boix 2003, Chapter 4). Here the bias from omitting a measure of natural resources is likely to lead to an over estimate of the impact of ALLFEDDEM and FED/DEM. I adopt as my measure of a country's resource endowment the percent of GDP arising from the extraction industries (Hall and Jones 1999). A country's natural resource endowment was never significant and there were no effects on the governance coefficients from the inclusion of this variable.

- A country's *colonial origins* is thought to influence its modern form of governance and subsequently its current economic performance; see Acemoglu, Johnson and Robinson (2001) and Hall and Jones (1999). Of particular interest here is the possible influence of a British colonial past; Britain used administrative federalism in many of its colonies as a way to control ethnic or religious conflicts. When those countries became independent the original administrative provinces or states often remained in place as lower-tier governments—for example, as in Australia, Canada, India, Malaysia, Nigeria, Pakistan, Tanzania and the United States. The control variable for British colonial origins was nearly always insignificant in the outcome equations—the exceptions were a significant positive effect on GADP and YRS/ED—and its inclusion had no effect on the governance results in Table 3.

- A country's *legal origins* is argued by La Porta et al. (1999) to have important effects on a country's government efficiency and rights performance. A country's choice of a legal system and its choice of governance are typically made simultaneously. They find Socialist and French legal origins correlate with dictatorial and unitary governance, weaker personal rights performance, but stronger performance on education opportunities. Omitting measures of legal origins, therefore suggests a possible upward bias to Table 3 estimates of democratic and federal governance's impacts on rights but a downward bias on access to economic opportunities. I included the La Porta et al.'s indicator variables for English, French, German, Scandinavian or

Socialist legal origins in the core outcome equations, both individually and as a set. I find results comparable to those reported by La Porta et al. on rights performance and because of the importance of rights protection for economic performance a strong negative effect of socialist legal origins on Y/L. Again, however, the core estimates for DEM and ALLFEDDEM in Table 3 remain in place.

- The new political economy suggests a country's choice of its *electoral process* will have important effects on fiscal policies and through fiscal policies on private sector economic performance; Przeworski et al. (2000) provide the needed data. Persson and Tabellini (2004), for example, find beneficial effects of majority rule governance for fiscal efficiency and economic growth. The literature on federalism stresses the importance of electoral systems, in particular strong party governance, for protection of decentralized governance; see Riker (1964). Direct measures of party strength are not available, but by Duverger Law majority rule governance and presidential systems are generally seen to favor fewer, and presumably stronger, parties. Here the omitted variable would be the interaction of our federalism measures with majority electoral rules, expected to have a favorable effect on outcomes. This is exactly what we observe for the three important cases in Table 3 where both DEM and ALLFEDDEM are significant—Y/L, GADP and POL/CIV. For these outcome measures, majority rule governance strengthens the influence of assignment decentralization over that seen in parliamentary democracies just as Riker conjectured.[19]

I conclude the core results in Table 3 remain in place with the inclusion of these additional controls, with one important exception. Estimating the effect of democracy on the level and distribution of education may be biased upward if a control for a country's predominance as a Muslim nation is not included in the specification.

While the results above are reassuring as to possible bias, we cannot rule out the possibility that there still remains some unmeasured omitted variable that might be generating the positive correlations between governance and outcomes in Table 3. Controlling for this possibility requires the use of instrumental variables (IV) estimation. Table 4 (columns IV) present IV estimates for our core relationship between valued outcomes and the two

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[19] In particular, decentralized parliamentary democracies improve Y/L by 0.096 (0.06), GADP by 0.07 (0.04) and POL/CIV by 0.07 (0.07) while decentralized majority rule democracies improve this performance by an *additional* 0.14 (0.08) for Y/L, 0.09 (0.06) for GADP and 0.15 (0.09) for POL/CIV. Since, the separate effects are all not quite significant but the joint effects are, I continue to use the average effects reported in Table 3 as my core estimates. A recent paper by Enikolopov and Zhuravskaya (2006) also tests the Riker conjecture, and they too find some evidence in its favor.

institutional variables, DEM and ALLFEDDEM. DEM measures the contribution of democracy (above dictatorship) to value performance and ALLFEDDEM measures the additional contribution above democracy from either constitutional (FED/DEM) or administrative (AFED/DEM) federalism. The most likely source of bias is a possible correlation of an omitted variable with the percent of revenues raised locally, the variable used to define administrative federalism and thus ALLFEDDEM. I instrument for ALLFEDDEM using two (assumed exogenous) constitutional variables, number of provinces (N) and provincial representation to the central government (R) and country land area.[20] The F-statistic for the significance of the three instruments in the first-stage estimates of ALLFEDDEM is $F_{3,66} = 4.69$. Though as a group the three instruments are significant at the 0.01 level of confidence, they are "weak" by current standards requiring F-statistics > 10; see Bound, Jaeger, and Baker (1995). Still the results in Table 4 offer a plausible improvement to any omitted variable bias in the OLS estimates in Table 3; the Hahn–Hausman (2005) approximation for the ratio of bias in the 2SLS estimates relative to the OLS estimates is about 0.10 with these three instruments.[21] IV results in Table 4 continue to support the view that federal institutions enhance federal values, and in several instances (GC6589, Y/L, LEGALTRAN, GADP) the estimated coefficients suggest an even stronger effect of federalism on values than reported in Table 3.

There remains a final concern—that the constitutionally specified institutions themselves (DEM, N and R) are endogenous. Recent research strongly suggests a country's decision to be democratic or to adopt a federal constitution is largely idiosyncratic, ruling out any compelling IV strategy; see Acemoglu et al. (2007). Lacking instruments, an alternative

[20] See Panizza (1999) and Arzaghi and Henderson (2005). The endogenous variable ALLFEDDEM is a (0,1) variable. The results in Table 4 use the predicted values for ALLFEDDEM from the first-stage equation as the second-stage instrument rather than the implied (0,1) value, a specification that assumes outcomes are chosen in response to the likelihood that governance will be "federal-like" in its effects. The qualitative results and significance were similar when I converted the first-stage estimates into a predicted (0,1) value for the second-stage. See Maddala (1984, pp. 242–7). I also used an alternative strategy as robustness check for my definition of ALLFEDDEM. Omitted variables correlated with local revenue shares may mean I have misclassified some countries as AFED/DEM when then should have been UNT/DEM and conversely. This problem would arise for those countries right at the dividing line between the II and III quartiles in the distribution of percent revenue raised locally—that is, for France, Italy and the Netherlands now in AFED/DEM and Greece, Iceland and Ecuador now in UNT/DEM. I reversed the classifications and re-estimated all value equations. The effects of ALLFEDDEM and UNT/DEM on valued outcomes all fell slightly, but significance remained.

[21] Hahn–Hausman (2005) specify the ratio [Bias(2SLS)/Bias(OLS)] $\approx l/n \cdot R^2(\text{Adj})$, where l is the number of instruments (=3), n is the sample size for the first stage regression (=73) and $R^2(\text{Adj})$ is the adjusted R^2 from the first stage regression (=0.55): [Bias(2SLS)/Bias(OLS)] $\approx 3/73 \times 0.55 = 0.08$.

Table 4 Robustness

Federal value	CONSTANT (IV)	DEM (IV)	ALLFEDDEM (IV)	CONSTANT (EST. GOV.)	ALLFEDDEM (EST. GOV.)	FED/DEM (EST. GOV.)	UNT/DEM (EST. GOV.)
GC6589	**0.149 (0.018)***	0.028 (0.021)	**−0.061 (0.034)***	**0.151 (0.020)***	0.009 (0.030)	−0.022 (0.025)	0.005 (0.023)
TICORRUPT	**8.38 (0.57)***	**−1.82 (0.71)***	0.635 (1.16)	**8.75 (0.72)***	−1.08 (0.94)	−0.179 (0.802)	**−1.22 (0.71)***
Y/L	−0.026 (0.050)	0.059 (0.064)	**0.291 (0.112)***	−0.086 (0.059)	**0.163 (0.090)***	**0.128 (0.075)***	**0.128 (0.070)***
VOTE	**0.514 (0.042)***	0.048 (0.054)	0.014 (0.096)	**0.579 (0.049)***	0.127 (0.079)	−0.052 (0.064)	0.015 (0.060)
LEGALTRAN	**0.892 (0.040)***	0.005 (0.050)	**0.169 (0.087)***	**0.856 (0.045)***	**0.153 (0.066)***	−0.013 (0.057)	**0.085 (0.045)***
GADP	0.418 (0.041)	0.037 (0.053)	**0.191 (0.093)***	**0.359 (0.050)***	**0.132 (0.078)***	0.046 (0.068)	0.068 (0.060)
POL/CIV	0.082 (0.057)	**0.220 (0.075)***	0.151 (0.133)	−0.010 (0.065)	**0.232 (0.101)***	0.132 (0.088)	**0.272 (0.079)***
YRS/ED	**1.42 (0.62)***	0.661 (0.698)	1.62 (1.12)	0.798 (.701)	1.09 (0.99)	1.23 (0.86)	**1.30 (0.78)***
EQ/ED	**0.506 (0.060)***	**0.149 (0.069)***	−0.098 (0.110)	**0.477 (0.063)***	**0.149 (0.089)***	−0.036 (0.077)	**0.208 (0.069)***
LIFEXP	**51.89 (2.57)***	**8.34 (3.39)***	−3.65 (6.03)	**55.83 (2.51)***	2.58 (4.00)	1.51 (3.40)	4.05 (3.06)
GINI	**46.27 (2.72)***	−0.532 (3.42)	−6.21 (5.63)	**43.85 (2.35)***	−4.07 (3.10)	−0.52 (2.66)	0.278 (2.43)

All regressions include the control variables for the absolute value of the country's latitude and for the number of years since 1800 that the country has been independent (free of colony rule). Standard errors within parenthesis. *Values in bold typeface indicate statistical significance at the 0.10 level or better.

strategy is to limit the sample to those countries where the institutions of governance have been long established, and thus not plausibly ''caused by'' current sample period outcomes. Table 4 (columns EST. GOV.) repeats the core regressions for the full set of democratic institutions—ALLFEDDEM, FED/DEM and UNT/DEM—using a sample limited to the 50 countries whose current constitutions were written before 1950.[22] First, democratic institutions remain important in this restricted sample, outperforming dictatorships in limiting corruption (TICORRUPT), providing high output per worker (Y/L), the orderly transfer of executive power (LEGALTRAN), protecting economic (GADP) and political and civil (POL/CIV) rights and in providing education (YRS/ED) to both men and women (EQ/ED). Second, federal democracies do at least as well as unitary democracies in providing these valued outcomes and sometimes significantly better, particularly so in protecting economic rights and providing high output per worker.

4 What role for federal institutions?

The core results of Table 3 found that federalism's unique contribution to valued outcomes could be achieved in either of two ways: First, by being a constitutionally established federal democracy (FED/DEM), or second, by adopting significant fiscal decentralization yet remaining a unitary democracy (AFED/DEM). The results in Table 3 found no statistically significant difference between the performance of these two governance structures. Is there any reason then to adopt a federal constitution? The answer is yes, and it is found in the ability of the formal institutions to protect the informal institution of policy decentralization. Regressing the average local share of government revenues (LOCREV) for our sample period on DEM, FED/DEM and country controls shows:[23]

$$\text{LOCREV} = \underset{(0.04)}{0.05} + \boldsymbol{\beta}(\text{ABSLAT}, \text{YRS/IND}) - \underset{(0.05)}{0.04} \times \text{DEM}$$

$$+ \underset{(0.05)^*}{0.13} \times \text{FED/DEM}, \quad R^2(\text{Adj}) = 0.29.$$

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[22] Excluded from the analysis are Botswana, Brazil, Bulgaria, Chile, Colombia, Czechoslovakia, Ecuador, Ghana, Greece, Honduras, Nicaragua, Nigeria, Pakistan, Panama, Papau New Guinea, Peru, Portugal, Russia, South Africa, Spain, Vietnam, Zambia and Zimbabwe.

[23] Standard errors are within parentheses, and an * indicates significance at the 0.05 level. The results are similar for a sample of democracies only. The institution variables, N and R, have the following sample means and standard deviations: FULL SAMPLE: Mean $N = 9.69$ (14.97); Mean $R = 0.34$ (0.48); FEDERAL SAMPLE: Mean $N = 16.84$ (18.87)); Mean $R = 0.73$ (0.45); FED/DEM SAMPLE: Mean $N = 20.38$ (12.41); Mean $R = 1.00$ (0.00).

The individual role of each federal institution is seen when N and R replace FED/DEM:

$$LOCREV = \underset{(0.03)}{-0.02} + \boldsymbol{\beta}(ABSLAT, YRS/IND)$$
$$\underset{(0.04)}{-\,0.03} \times DEM + \underset{(0.001)^*}{0.007} \times N + \underset{(0.04)}{0.03} \times R, \quad R^2(Adj) = 0.56.$$

The results are nearly identical if the local revenue share equation is estimated for a sub-sample of democracies alone. What federal institutions provide, particularly the creation of provinces as constitutionally protected political jurisdictions, is protection for policy decentralization.[24] What policy decentralization provides is valued federal outcomes.

Finally, estimates for one plausible *structural* connection from federal institutions to valued federal outcomes is shown in Figure 1.[25] First, institutions promote policy decentralization. Then democracy plus policy decentralization act to protect economic property rights (GADP) and political and civil rights (POL/CIV). Rights protection in turn increases country output per worker (Y/L). Output per worker enhances life expectancy (LIFEXP) and educational opportunity (EQ/ED). In the end citizens appear to be happier, at least as ranked by the Friends of the Earth's (2006) composite index of life satisfaction, under democratic

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[24] Provincial leaders, even if they lack direct representation to the central government, appear to have sufficient informal political influence to protect their local policy domains. This conclusion has direct relevance to the recent constitutional debates in the United States as to how best to protect the valued outcomes of federalism. The Supreme Court in *Printz v. United States* argues that the states *as separate governments* must be protected, while Wechsler (1954), Choper (1980) and the Court in its earlier decision in *Garcia v. San Antonio Metropolitan Transit Authority* argued that state representation to the US Senate would be sufficient protection. The international evidence presented here supports the Court's current position.

[25] Estimates of the influence along each path in Figure 1 was by OLS, again controlling for ABSLAT and YRS/IND. The individual links were also estimated by IV, using N, R and country land area as instruments for LOCREV in the GADP and POL/CIV equations, and then N, R, area, British legal origins and being a Muslim nation as instruments for GADP and POL/CIV in the Y/L, LIFEXP and ED/EQ equations. The IV estimates for each linkage are statistically significant and tell the same qualitative story as presented in Figure 1.
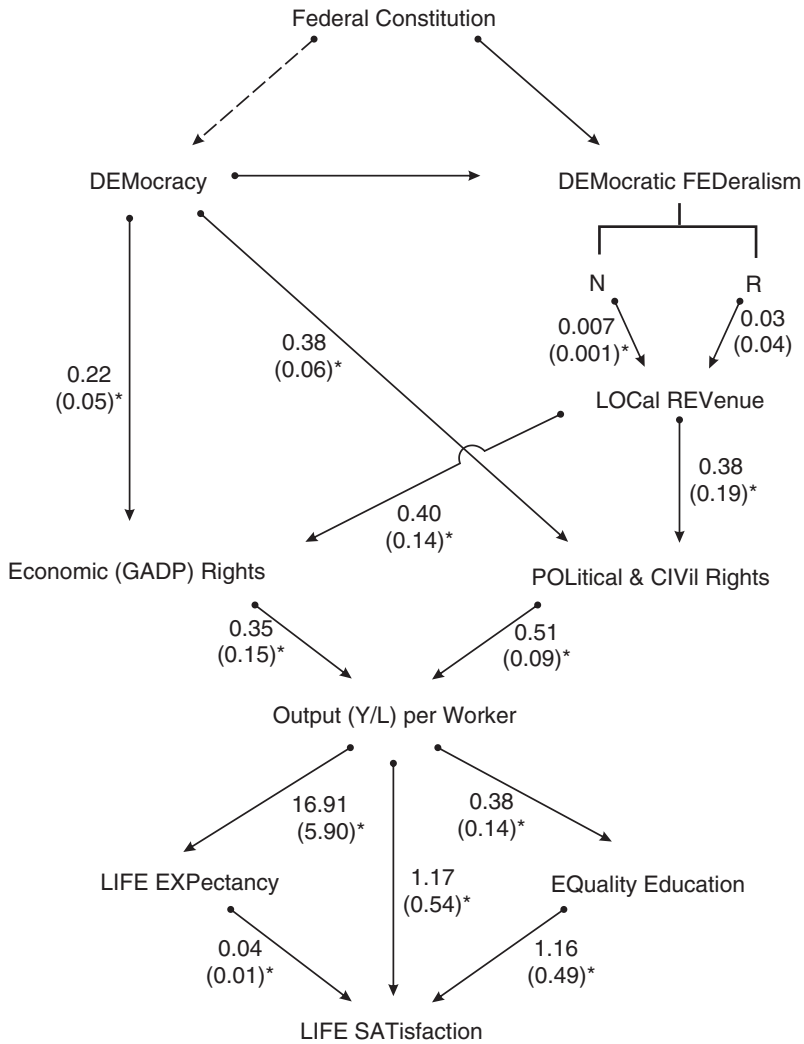
Federal Constitution

DEMocracy

DEMocratic FEDeralism

N

R

0.007
(0.001)*

0.03
(0.04)

0.38
(0.06)*

0.22
(0.05)*

LOCal REVenue

0.38
(0.19)*

0.40
(0.14)*

Economic (GADP) Rights

POLitical & CIVil Rights

0.35
(0.15)*

0.51
(0.09)*

Output (Y/L) per Worker

16.91
(5.90)*

0.38
(0.14)*

LIFE EXPectancy

1.17
(0.54)*

EQuality Education

0.04
(0.01)*

1.16
(0.49)*

LIFE SATisfaction

Figure 1 The Value of Federalism
Note: *Indicates statistical significance at the 0.05 level or higher.

federalism because of federal institutions' favorable impacts on valued federal outcomes.[26]

5 Conclusions

Federal governance has been long been embraced by political philosophers, legal scholars and economists for its ability to encourage political participation, to protect personal rights and liberties and to promote public and private sector economic efficiency. Policy-makers today, both in new and established democracies, seem equally enamored. This article provides some initial evidence as to the ability of federal institutions to deliver on this promised agenda by comparing country performance on each of 11 valued outcomes for a sample of 73 countries, including the generally recognized 13 federal democracies and 11 federal dictatorships. As with any cross-country analysis, cautious use of these results is recommended. Three conclusions, however, seem worth emphasizing.

First, whether formally established by constitutional provision or informally implemented by a central government decision, decentralized governance does have a unique contribution to make to a society's ability to enforce property rights, to protect political and civil rights, and then because of such rights protections, to enhance private sector economic performance. Second, while policy decentralization is the key to federalism's strong rights and economic performance and can be achieved within a unitary government by fiat, constitutionally established provincial (or state) governments provide an extra and important protective barrier for policy decentralization. Federal institutions protect policy decentralization, and policy decentralization provides federalism's valued outcomes. Third, federalism needs democracy. There is no evidence

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[26] Krueger and Schkade (2007) find such indices do measure plausible differences in citizen well-being. The life satisfaction index used here has a maximum value of ten representing "extremely satisfied". For this sample, the index's mean is 6.46 (S.D. = 1.03). Reduced form estimates of the contribution of DEM and ALLFEDDEM to life satisfaction (LIFE/SAT) for this sample of countries shows:

$$\text{LIFE/SAT} = \underset{(0.21)}{5.70} + \underset{(0.007)}{0.009} \times \text{ABSLAT} + \underset{(0.274)^*}{0.701} \times \text{DEM}$$
$$+ \underset{(0.292)}{0.408} \times \text{ALLFEDDEM}, R^2(\text{Adj}) = 0.32$$

Standard errors within parentheses. An * indicates statistical significance at the 0.10 level or better. In a related paper, Frey and Stutzer (2000) asked if federal institutions might also make a direct (i.e. structural) contribution to citizen welfare beyond their instrumental contribution as shown in Figure 1. Adding DEM and ALLFEDDEM along with LIFEXP, Y/L, ED/EQ to the structural estimation of LIFE/SAT shows both variables are statistically insignificant. For this sample at least, institutions only matter to citizens because of their substantive contribution to income, health and opportunity.

from this sample that adding policy decentralization or provinces to a dictatorship significantly improves a dictatorship's rights or economic performance.

Finally, though we have no evidence on the point here, federalism's greatest contribution may come from its ability to enhance the transition to democracy itself. The empirical analysis makes clear the very significant advantages democratic societies hold over dictatorships on most all of our measured dimensions of societal performance. But to move peacefully from a dictatorship to a democracy will typically require protections for the economic interests and civil rights of the once ruling elite. It is here that federal governance seems to have its institutional comparative advantage and, once recognized (as in Figure 1), may offer federalism's greatest potential for improving societal welfare.

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Appendix: Variables Definitions and Sources

Dependent variables

EQ/ED: Ratio of females years of education to male years of education for all residents over the age of 25, averaged over the period 1965–1989. Mean = 0.78 (S.D. = 0.21). *Source*: Barro and Lee (2000).

GADP: The Hall–Jones index of *g*overnment *a*nti-*d*iversion *p*olicies, created for the years 1986–1995 as a measure of government's enforcement of law and order and control of corruption (scaled from 0–1, higher score representing policies supportive of private economic activity). Mean = 0.66 (S.D. = 0.21). *Source*: Hall and Jones (1999).

GC6589:   Percentage share (in 100s) of GDP of all nondefense, noneducation spending, averaged over the period 1965–1989. Mean = 9.18 (S.D. = 6.42). *Source*: Barro and Lee (2000) and Penn World Tables, PWT6.2.

GINI: Gini Coefficient for pretax income, averaged over the period 1965–1995 (last year available) for all years available. Lower values of the coefficient imply a more equal distribution of income. Mean = 38.87 (S.D. = 10.29). *Source*: Deininger and Squire (1996).

LIFEXP: Life expectancy in the year 2000. Mean = 68.56 (S.D. = 11.53). *Source*: *World Development Report, 2005*, World Bank.

POL/CIV: The inverse of the Freedom House's measure of civil rights protection (scaled as 1–7, with higher values representing weaker rights), average over the period 1965–2000. The inverse is used, so that higher values represent stronger civil rights protection (see footnote 9). Mean = 0.43 (S.D. = 0.31). *Source*: *Freedom in the World*: *Annual Survey of Political rights and Civil Liberties*, Freedom House, various years.

LEGALTRAN: The share of all scheduled transfers of executive power over the period 1965 to 1982, which are done by constitutionally approved means. Mean = 0.90 (S.D. = 0.13). *Source*: *World Handbook of Political and Social Indicators*, Various years.

TICORRUPT: Transparency International measure of government corruption (scaled as 1–10, with higher values representing greater corruption), averaged over the period 1993–1998 with missing observations supplemented by re-scaled scores from the *International Country risk Guide*'s corruption index. Higher values of the index represent greater corruption. Mean = 5.08 (S.D. = 2.54). *Source*: Treisman (2000).

VOTE: Rate of voter participation in national elections measured as the number of voters as a share of registered voters. Mean = 0.65 (S.D. = 0.16). *Source*: *World Handbook of Political and Social Indicators*, Various years.

Y/L: Output per worker in 1988 as estimated by Hall–Jones, measured relative to the United States as a value = 1.00. Mean = 0.375 (S.D. = 0.298). *Source*: Hall and Jones (1999).

YRS/ED: Years of education for all residents over the age of 25, averaged over the period 1965–1989. Mean = 5.11 (S.D. = 2.69). *Source*: Barro and Lee (2000).

Independent variables: Country classifications

AFED/DEM: Country is democratic (DEM = 1) and classified as a de facto or administrative federal democracy by an upper two quartile rank for the share of local government revenues in total revenues (AFED/DEM = 1;0 otherwise). Mean = 0.12 (S.D. = 0.33). *Source*: Table 1. Local government revenue in general revenue is defined as the annual percentage of all government revenue raised by provincial, state,

and local governments., averaged over the years 1965–1995. Mean = 0.21 (S.D. = 0.16). *Source*: International Monetary Fund, *Government Finances*, various years. Noted as % *Rev. Local* in Table 1.

ALLFEDDEM: Country is classified as either a formal (FED/DEM = 1) or administrative (AFED/DEM = 1) federal democracy. Mean = 0.30 (S.D. = 0.35). *Source*: See FED/DEM and AFED/DEM.

DEM: Country has been considered democratic for 50 percent or more of the years from 1960–2000 (DEM = 1;0 otherwise) and is democratic in 2000. Mean = 0.52 (S.D. = 0.50). *Source*: Przeworski et al. (2000) supplemented by *Freedom in the World: Annual Survey of Political rights and Civil Liberties*, Freedom House, various years. See Table 1.

FED/DEM: Country is democratic (DEM = 1) and is classified as a de jure, constitutionally based federal democracy (FED/DEM = 1;0 otherwise). Mean = 0.18 (S.D. = 0.39). *Source*: *Handbook of Federal Countries*, 2002, Griffiths and Nerenberg (2002). See Table 1.

FED/DICT: Country is not democratic (DEM = 0) but classified as a formal federal republic (*FED/DICT* = 1;0 otherwise). Mean = 0.15 (S.D. = 0.36). *Source*: *Handbook of Federal Countries*, 2002, Griffiths and Nerenberg (2002). See Table 1.

UNT/DEM: Country is democratic (DEM = 1) and is classified as a unitary democracy, either because there are no provinces or states or because country is a lower two quartile rank for the share of local government revenues in total revenues (UNT/DEM = 1;0 otherwise). Mean = 0.22 (S.D. = 0.42). See Table 1.

Independent variables: Country controls

ABSLAT: Distance from the equator measured in the absolute value of latitude degrees. Mean = 28.62 (S.D. = 17.44). *Source*: Global Demography Project.

YRS/IND: The number of years from date of independence (beginning 1800) to 2000. Mean = 118.01 (S.D. = 67.57). *Source*: World Fact Book, 2005.