Why so much centralization? A model of primitive centripetal accumulation

Jean-Paul Faguet

"WHY SO MUCH CENTRALIZATION?

A Model of Primitive Centripetal Accumulation"[1]

Jean-Paul Faguet

London School of Economics and Political Science

The Suntory Centre
Suntory and Toyota International Centres for
Economics and Related Disciplines
London School of Economics and Political Science
Houghton Street
London WC2A 2AE

Tel: (020) 7955 6674

DEDPS 43
June 2004

[1] I am grateful to Tim Besley for posing the question in the title, and to Monica Baumgarten, Teddy Brett, Shanta Devarajan, Gunnar Eskeland, Markus Haacker, Lawrence Saez and seminar participants at the LSE for their thoughtful criticisms and advice. I thankfully acknowledge financial support from the ESRC and the LSE/DFID Crisis States Programme. All remaining errors are my own.

Abstract

With strong conceptual arguments in its favor, decentralization is a popular and growing policy trend across the world. And yet dozens of empirical studies have failed to find convincing evidence that past reforms have worked. This begs two questions: (1) Why does decentralization produce indifferent results? and (2) Why is there so much centralization in the first place? The paper develops a simple model of a legislature in which municipal representatives bargain with central government agents over the allocation of public resources. By locating central government in a particular geographic space – the "capital" – and invoking self-interest on the part of its residents, I can answer both questions. I introduce the concept of residual power, which underpins the model and determines the flow of resources to districts. There is so much centralization because residual power is located in the capital, whose residents directly benefit from weak local governments.

Keywords: centralization, decentralization, local public goods, local government, municipal government, legislative bargaining, capture

JEL: D72, D73, H41, H42, H77, O18

Table of Contents

1. Introduction

Many authors have noted the large and growing trend across the world towards decentralization. Campbell (2001), Manor (1997), Piriou-Sall (1998), Smoke (2001), World Bank (1994), and UNDP (1993), to name just a few, document the efforts of literally scores of countries in Africa, Asia and Latin America to devolve power and resources to lower tiers of government and/or deconcentrate their administrations in various ways.[1] Enthusiasm is predicated on claims that decentralization can make government more responsive to citizens' needs by "tailoring levels of consumption to the preferences of smaller, more homogeneous groups" (Wallis and Oates 1988, 5); by "bringing government closer to the governed", decentralization should make government work better (Ostrom *et al.* 1993, Putnam 1993). The existence of such a broad, international fashion for potentially far-reaching reform begs two obvious questions: (i) Is there empirical evidence that decentralization works? and (ii) Why is there so much centralization in the first place?

Curiously, the answer to the first question appears to be "no". The vast majority of scholarly studies on decentralization's effects have yielded ambiguous results: in country after country, decentralization improved some aspects of public services, worsened others, and left the remainder largely unchanged. Rondinelli, *et al.* (1983) conducts an exhaustive review of three decades worth of decentralization studies. More recently, Smoke and Piriou-Sall provide updating surveys of the literature, with quite similar conclusions. Theoretical claims based on inductive reasoning from particular instances (*i.e.* cities, regions) of success are not supported across larger samples – often from the same countries. Such evidence is not encouraging, and does not support reformers' continuing efforts. Hence we re-frame our question: Why does a reform with such strong arguments in its favor so rarely succeed?

---

[1] Manor (1999) states that "over 80 percent of developing and transition countries… are experimenting with decentralization." (p.viii)

Secondly, in order for so many countries to be experimenting with decentralization – quite apart from the wisdom of doing so – they must have first developed relatively centralized governmental-administrative structures. Why did this happen? Until quite recently economic theory provided few answers to this question, and other disciplines have taken the lead. Historical analysis has emphasized the role of nationalism and the construction of the nation-state. In a context of overt national competition, such as Europe since the Renaissance, there were clear advantages to countries that could articulate a distinct identity and project military power beyond their borders. Centralizing power and resources aided governments in the achievement of both goals. Social, cultural and religious trends contributed to making the state seem the natural and best form of civic society, hence facilitating the growth of its powers, Kennedy (1988) admits. But it was the military, economic and organizational demands of war that really drove this process.

To this Hobsbawm (1987) adds social and ideological reasons natural to the late-nineteenth century. Worried by socialist agitation and outbreaks of civil unrest, political elites first in Germany, and then Austria, Britain and France enacted broad programs of social reform and welfare which undercut support for radical politics, but also undermined liberal notions of limited government, private enterprise and self-help. Once these boundaries were crossed, the state embarked on a path of steady expansion. Lastly, the intellectual currents of the 19th and 20th centuries also played a role. For different reasons and in different ways, real socialism, social democracy, developmentalism, import substitution, and even structural adjustment led to increasingly powerful central states that intervened at all levels of the economy and society.

Such theories provide historically rich explanations of how centralization arose in particular groups of countries, especially in Western Europe. But they are too particularistic and path-dependent to provide a general explanation of centralization across the globe. As indicated above, highly centralized states arose across six continents and four centuries, in countries rich and poor, industrial and agrarian, tropical and temperate alike. Explaining so broad a phenomenon would seem to require a simple, incentives-based theory.

This paper develops a simple, game-theoretic framework that can answer these two seemingly unrelated questions. Using a model of political bargaining under a variety of constitutional arrangements, I can explain why governments everywhere tend toward centralization, and also why decentralization experiments over the past four decades have produced indifferent results, and often failed. Key to solving the model is the concept of residual power in a federal system, which emerges intuitively from the framework. The rest of the paper is organized as follows. Section 2 reviews the political and economic literature on (de)centralization and democracy, focusing on how centralization arises. Section 3 presents a model of central vs. decentralized government, featuring political bargaining over public resources. Section 4 summarizes the results and draws out policy implications.

2. The Literature

The 21 centuries that separate Plato's *Republic* from Rousseau's *Social Contract* saw little discussion of issues of (de)centralization by political theorists. Summarizing heroically, this is because the idea of democracy changed little throughout Platonic, Medieval and Renaissance times, featuring assemblies of free men who represented themselves directly. Democracy was fit for city-states whose populations numbered in the tens of thousands, not millions. Larger populations and expanses of territories required monarchical rule (Rousseau 1968 [1762]). As decentralizing political authority was unnecessary in a city-state, and nonsensical in a monarchy, the question of decentralization did not arise.

The transformation of the democratic ideal from city-state to federal democracy, where the many are represented in a legislature by the few, allowed new conceptions of individual rights and freedoms to flourish (Dahl 1989). Larger nations could internalize large problems that eluded city-states, and the capacity of citizens to govern themselves was significantly enhanced. Centralization vs. decentralization of power was now relevant. Hence Hegel's (1967 [1821]) treatment of scale, arguing that bigger states would have more impartial civil servants more concerned with the public good, as authority became impersonal and the social ties and passions that distort public decision-making in smaller realms were diluted.

But it was political theorists concerned with the new United States that treated the question in greatest depth. Indeed in the *Federalist Papers*, the classic statement of American political thought, Madison, Hamilton and Jay sought to discredit the loose union between the states under the Articles of Confederation, with its feeble executive and weak federal powers, in favor of the new Constitution. The *Federalists* sought a stronger, more centralized national government, arguing that this would decrease the risk of war, both external and internal, and improve defenses against a hostile world; boost commerce and the national economy; improve the ability of government to finance itself; decrease the "explanations and compensations" that powerful foreign powers might be able to extract; and – like Hegel – improve the quality of political leaders.

Such arguments notwithstanding, theirs was not a fundamentally centralizing project, but rather an attempt to re-balance the distribution of powers in the young nation towards a less extreme, but still highly decentralized federation of states. Indeed, the *Federalists* dismissed the threat of centralization in the US with something akin to scorn. This view proved prescient, as Tocqueville (1967 [1835, 1840]) chronicled four decades later, describing an American system of government that was far more decentralized than any in Europe. Indeed, as late as the early twentieth century the federal government's responsibilities were limited to managing the currency, limited taxes, tariffs and bond emissions, and partial regulation of interstate carriers (Carleton 1960), with other functions the preserve of the states.

Tocqueville admired this decentralization and decried its opposite as leading to tyranny. But even in countries such as the US, he warned, power has a natural tendency to grow more centralized over time, as individuals seek to enlist the efforts of public authorities to their own benefit, so gradually extending state authority over previously private affairs. Unlike Hegel and the *Federalists*, here at last was a theory of centralization based not on appeals to the good, but rather micro-level incentives of individuals and policymakers. In this sense it is similar to the model developed below.

The economic literature on (de)centralization is usefully divided by Bell (1989) into two methodologically distinct camps: (i) the conventional literature, exemplified by Oates (1972), in which government officials act as social planners maximizing well-defined objective functions; and (ii) the Leviathan literature, exemplified by Brennan and Buchanan (1980), where officials are self-interested individuals who maximize private utility functions. As we shall see below, my approach borrows this Leviathan idea of self-interested officials, and adds a mechanism of policy determination through political bargaining.

The Leviathan literature is more generally a large and important body of work which is central to the fields of public choice and political economy. Important contributions which developed the idea of governments that behave opportunistically include: Becker (1983), Brennan and Buchanan (1977, 1978, 1980), Buchanan (1975), Downs (1957), Niskanen (1971), Posner (1974), Stigler (1971), and Tullock (1965). But its treatment of issues of (de)centralization is much more limited than the conventional literature. In particular, it does not address how decentralization comes about, nor why it might fail. Because of this, and for parsimony, I focus mostly on the first camp.

One of the earliest exponents of the conventional view, and the classic economic treatment of decentralization, is Tiebout's (1956) "A Pure Theory of Local Expenditures", which spawned a large number of theoretical extensions and empirical applications. Tiebout posits a world of well informed individuals who move costlessly amongst localities that offer different levels of provision of a public good. Each locality finances its public good through efficient taxation of local residents. The ensuing competitive equilibrium in locational choices produces an efficient allocation.

But Tiebout's paper makes no attempt to model central government, either as coexisting with local governments or independent of them, nor to explain its opposite – decentralization.[2] More generally, the highly mobile population and fixed governments at the model's core are at odds with anecdotal evidence from many countries, and studies of even the highly mobile United States (Bardhan 2001). A better assumption would seem to be that government is the mobile element in most local democratic systems, changing with relative frequency, whereas the population is essentially fixed over typical, four or five year electoral periods. Tiebout-style "voting with your feet" is surely a relevant mechanism for preference revelation at the margins, and may be more important for particular services, such as education. But the principal mechanism for joining demand and supply for public goods must involve the political process. Indeed this is arguably why local government exists at all.

Instead of horizontal competition between jurisdictions, Breton (1996) addresses the question of vertical competition between levels of government. Here, different tiers compete to provide citizens with the optimal type and quality of public goods in an effort to increase their "market share". I adopt an approach which is similar in some respects. In the model

[2] Rubinfeld (1987) and others have pointed out that Tiebout's model is not really about decentralization at all, despite the large number of studies that interpret it that way.

developed below, central government proposes to provide superior public goods to localities. But as we shall see, such promises are not necessarily honored.

Oates (1972) builds on Tiebout by modeling central and local governments explicitly in order to examine heterogeneity in tastes and spillovers from public goods. Here, local government can tailor public goods output to local tastes, whereas central government produces a common level of public goods for all localities. He finds that decentralization is preferred in systems with heterogeneous tastes and no spillovers; with spillovers and no heterogeneity, centralization is superior on efficiency grounds. Levy and Truman (1971) argue that uniformity of central public goods is a political asset, not just en empirical regularity, helping to effect real income redistribution and maintain political support for the government.

Besley and Coate (1999) provide a model in which the restriction on central government choice is lifted. Like Oates, they invoke uniform taxation to finance public goods provision. But they devise a model of central policy-making in which elected representatives bargain over public goods provision in multiple districts. For heterogeneous districts, they find that decentralization continues to be welfare superior in the absence of spillovers, but centralization is no longer superior when spillovers are present. They also find that higher heterogeneity reduces the relative performance of centralization for any level of spillovers.

Bardhan and Mookherjee (1998) develop a model of public service provision which examines the implications of decentralization for the targeting and cost-effectiveness of public expenditure. They find that for provision of a merit good available on competitive markets to the poor, decentralization dominates with respect to inter-community targeting and cost-effectiveness, though not necessarily for intra-community targeting. For the provision of infrastructure, decentralization dominates only if local governments are not vulnerable to capture, local government has adequate financing, inter-jurisdictional externalities do not exist, and local governments have all the bargaining power vs. public enterprise managers.

As Panizza (1999) notes, Breton and Scott (1978) are typical of another strain of the literature, which examines the role of organization costs in centralized vs. decentralized systems. A decentralized system may reduce costs associated with mobility and signaling, but is likely to increase administrative and coordination costs. The optimal level of decentralization is that which minimizes the sum of these costs.

Lastly, Faguet (2004) proposes a model of public investment in which local government can detect local needs more accurately than central government, but the center has a technical or organizational advantage (economy) in the provision of public services. In this system, a given district will be better off under central government when the center's cost advantage dominates its inaccuracy in ascertaining local preferences; where inaccurate detection dominates, local provision is preferred.

The central similarity in all of these approaches is that they are exercises in comparative statistics that presuppose the existence of central and local governments. As a rule, such models assume that resource allocation is a function of external parameters, and the differences between central and local government do not have to do with the structure of government and the processes by which decisions are taken. If central economies dominate, welfare will be maximized under central government as it disinterestedly distributes a bigger pie amongst districts according to its objective function. Such models are useful for focusing on the welfare and efficiency implications of different equilibria under a variety of assumptions about vertical resource and power distribution. Lacking a dynamic element, however, they cannot explain how centralization arises, nor how decentralization might come about, or fail. We must thus look to an approach that models political processes in a dynamic context.

The model proposed here builds a mechanism of political bargaining onto Faguet's simple framework in order to provide a more refined portrayal of the ways in which central and local governments interact. I assume the same political-geographic context, but differ in how central government's problem is conceptualized. Here, central and local government are not mutually exclusive social planners with parametrically varying objective functions. Rather, both are immersed in a bargaining framework that explicitly models interactions between the two and permits Pareto-improving cooperation. The choice between centralization and decentralization concerns the way each interacts with the other. Specifically, under decentralization there is no policy cooperation between center and periphery, while under centralization mutually beneficial cooperation is possible but not assured. Municipalities' allocation of public goods under centralization is the result of bargaining in a national legislature in which a district's representatives negotiate with central government officials, representing all other districts, in a positive-sum game[3] centered on the public purse. This mimics real-world political "horse-trading", where central government politicians bargain with local leaders for political support in exchange for commitments of public expenditure, locally-favorable policies, or other political rewards in the center's gift.

3. The Model

The model compares polar cases of centralized and decentralized government. Although highly stylized, this exercise is nonetheless useful in that it brings into stark relief the nature of the decision to (de-)centralize, focusing on the incentives and (later) uncertainties affecting the main actors involved. The model is most useful for exploring the effects of different constitutional arrangements on the equilibrium allocation of resources in a federal system. For ease of exposition, I first detail local and central government's objective functions and the

[3] The allocation of resources under central government is zero-sum, while the shift from local to central government is positive-sum.

bargaining process by which decisions are made, and then turn to the question of constitutions-as-commitment-mechanisms.

A country is made up of T districts, each with population n_j where subscript j denotes district. Local welfare is defined as median utility, $U_{mj} = x_{mj} + \theta_{mj}b(g_j)$, where θ_{mj} denotes local median preference for the public good g in district j, and x_{mj} is the median consumption of private good x in district j. Following Tiebout, the function of government is to provide public goods, which it finances with a local head tax. Central government has a cost advantage in the provision of public goods, such that the head tax needed to finance a given level of provision under central government is $\alpha g_j/n_j$ with $0<\alpha\leq 1$, whereas the tax under local government is g_j/n_j. This cost advantage can derive from various sources, such as central government's superior technical knowledge, or an organizational advantage which lowers the cost of complex public goods, or traditional economies of scale. Certain types of public health interventions, for example, require specialized technical knowledge which central government may be able to obtain more cheaply than local government. Hence for a given quality of output, central government's unit price is lower than local government's at all levels of production. Under central government each district has political (bargaining) weight λ_j in the national parliament where policy is made,[4] where $\lambda_j \geq 0$ and $\Sigma\lambda_j=T$.[5] Local government ascertains θ_{mj} accurately, whereas central government ascertains θ_{mj} with probability p and θ_{-mj} with probability (1-p). Probability varies as $p\in[0,1]$, and θ_{-mj} is defined as an unrestricted value of θ other than θ_{mj}.

Each district j has a local government which coexists with central government, itself located in a particular district c. Under decentralization all local public goods are produced by local government, and the central government dedicates itself to other pursuits. These other pursuits may be thought of as "national public goods", such as national defense, but they are

[4] In this framework, policy is understood to mean the level of public good provided.

extraneous to the model and not of concern here. Under decentralization, local government's problem in district j is

$$\max_{g} \left[\theta_m b(g) - \frac{g}{n} \right] \tag{1}$$

where for simplicity I drop all subscripts j. Taking first-order conditions and re-arranging yields

$$b'(g) = \frac{1}{n\theta_m} \tag{2}$$

The level of public good provided by local government is thus an implicit function of θ_m, the median preference for the public good, and of the population n. Citizens receive the level of public good that they prefer, which they pay for fully.

Under centralization, government takes on a cooperative form where the job of local government is to relay information on local needs to the center, while central government, with its cost advantage, produces public goods cheaply. Central government then allocates public goods across districts.[6] I assume that central government's cost advantage is an increasing function of the number of municipalities that cooperate with it, $\alpha=\alpha(t)$, $\alpha'>0$. This follows from the characterization of cost advantage α, which will tend to increase in t whether we think of it as an economy of scale, technical knowledge or organizational ability.

Under centralization, districts' locally-elected representatives bargain in a national legislature over the allocation of public goods. Central government's problem is represented by the Nash Maximand

$$Max\left(V_j - \underline{V}_j\right)^{\lambda_j}\left(V^* - \underline{V}^*\right)^{\lambda^*} \tag{3}$$

where V_j represents median utility in district j under central government's equilibrium allocation of g, and $\underline{V}_j$ represents the district's outside option. The negotiation takes place between the

---

[5] Thus if central government gives a particular district, such as the capital, a large weighting, average $\lambda<1$ for all the remaining districts in the country.

representatives of a given district j, and those of central government representing the rest of the country.[7] The outside option is simply district j's median utility under the decentralized equilibrium allocation of g, V_j^D, minus the cost of transition, k_j, from a centralized to a decentralized regime. V^* is the sum of median utilities in the T-1 districts which comprise the rest of the country under centralization, and $\underline{V}^*$ represents the sum of T-1 districts' outside options. λ^* is the sum of T-1 districts' political weights. That is to say,

$$V_j = \left(p\theta_{mj} + (1-p)\theta_{-mj}\right)b(g_j) - \alpha(t)\frac{g_j}{n_j}$$

$$\underline{V}_j = V_j^D - k_j$$

$$V^* = \sum_1^{T-1} V_j \quad , \qquad \underline{V}^* = \sum_1^{T-1} \underline{V}_j \quad , \qquad \lambda^* = \sum_1^{T-1} \lambda_j \qquad \text{and so on.}$$

Transition cost k can be thought of as the cost incurred in returning to local production of public goods, including attracting outside technical experts, training local officials, setting up the infrastructure and organizations necessary to provide and administer local services, and the like. I assume k is observable by both center and periphery. Central government's problem can thus be interpreted as a negotiation over how to divide the productive surplus from moving from local production to lower-cost central production of public goods.

Taking first-order conditions and re-arranging yields

$$\frac{(V_j - \underline{V}_j)}{(V^* - \underline{V}^*)} = \frac{\lambda_j}{\lambda^*}\frac{\partial V_j / \partial g_j}{\partial V^* / \partial g^*} \tag{4}$$

and

---

[6] This is generally similar to Ostrom, *et al.'s* polycentric model.

[7] In practical terms, central and local government can be thought to negotiate over the head tax h_j which central government charges the residents of district j for the public goods it provides, where $\alpha g_j/n_j \leq h_j \leq g_j/n_j$. The center keeps the difference $(h_j - \alpha g_j/n_j)$ for itself.

$$\frac{\partial V_j \big/ \partial p}{\partial V^* \big/ \partial p} = -\frac{\lambda^*}{\lambda_j}\frac{(V_j - \underline{V}_j)}{(V^* - \underline{V}^*)} \tag{5}$$

Equation (4) shows that district j and the rest of the country divide the surplus in proportion to their respective political weights and the marginal utility of the public good in each. Equation (5) states that the ratio of marginal utilities in district j and the rest of the country from increasing probability p is negative. Hence a unit increase in the probability that θ_{mj} is assessed correctly, which by definition must improve welfare in district j, must decrease welfare in the rest of the country – including district c where central government resides.

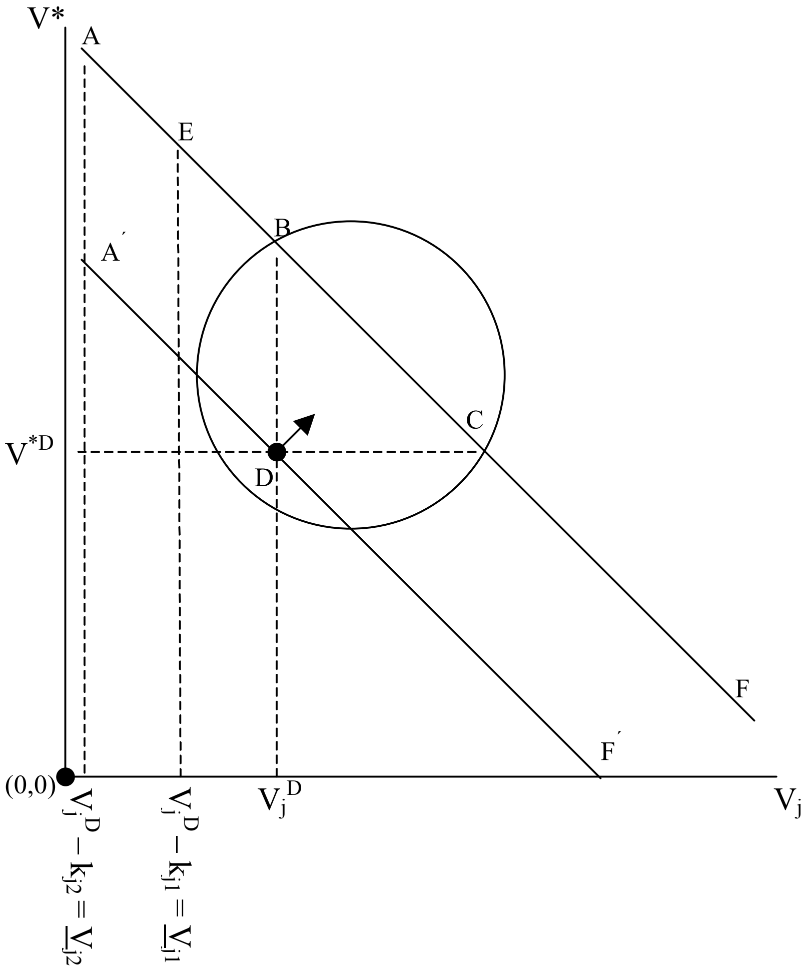
We can interpret this as an implicit cost of coordination which the center must incur to liaise with district j and use information on j's preferences accurately. Doing so reduces the size of the surplus.[8] This provides the center with a clear incentive to mis-assess local preferences. Note that this is not an explicit assumption, but emerges from the structure of the model. Thus in the aggregate, taking account of multiple negotiations, the center will tend to provide a policy mix different from the decentralized equilibrium, which is to say different from what non-central districts prefer. This is the first result of the model.

Figure 1 illustrates equilibrium allocations under both centralized and decentralized regimes. For convenience I assume λ_j=T/2 and draw the welfare frontier as a straight line. Under decentralization, the equilibrium solution for district j and the rest of the country is located at point D (V_j^D,V^{*D}). The move from local to central provision generates a productive gain which shifts the welfare frontier (in terms of aggregate utility) out from $A'F'$ to AF. Note that the size of the welfare gain ($A'F' \rightarrow$AF) increases with central government's cost advantage and decreases with the cost of coordination. Triangle BCD northeast of point D contains all

[8] Note that by assumption the set $\{\theta_{-mj}\}>>\{\theta_{mj}\}$. Hence p can be interpreted as a proxy for the effort central government expends in ascertaining local preferences, in the sense that it is costly to realize large values of p.

combinations of V_j and V^* that are Pareto-superior to (V_j^D, V^{*D}). The two parties will negotiate over points in this triangle. Line segment BC represents feasible allocation sets that Pareto-dominate all other sets in BCD, including the decentralized optimum D. BC thus describes all of the solutions that can occur in equilibrium. Unfortunately, the number of admissible solutions is infinite. This is a product of the unstructured form that negotiation has taken thus far. Adding a simple structure along the lines of a Nash bargaining game permits the reduction of an infinite set to a unique equilibrium.

Figure 1: Centralized and Decentralized Equilibria (for $\lambda_j = {}^{T}/_{2}$)



A Nash Bargaining Game

Representing central government's problem as a Nash bargaining game permits the incorporation of a participation constraint for district j, which provides the key to solving the model. The game is structured so that the negotiation over dividing up the centralization surplus involves central government offering district j enough incentive to cooperate. Three facets of the model are salient. First, the fact that central government is located in a given district c implies that its employees live in c and benefit from the public goods available there. Second, centralized production implies that the residents of c appropriate any part of the productive surplus not allocated to other districts in the country. They hold *residual power* in this political system, in the sense of power over residuals, an important point to which we return below. Locating central government in a particular district ensures it is selfish. Third, the fact that $\alpha=\alpha(t)$ gives central government an incentive to induce as many districts as possible to cooperate. District j, meanwhile, seeks to improve upon its decentralized allocation V_j^D. This combination of incentives generates a game in which the center offers districts the minimum allocation necessary to ensure the cooperation of the largest number, thereby maximizing its own allocation of public goods.

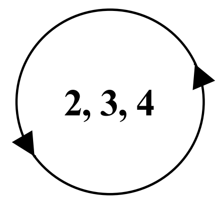
Bargaining takes the form of a repeated four-period, single-offer game. Negotiations between central government and all districts j occur simultaneously. In a negotiation with any given district j, central government represents all T-1 remaining districts. The four periods simulate a typical electoral cycle. Centralizing agreements take effect with a lag of one period. Defection from central to local government, however, can take place within a single period. This is because negotiation and coordination amongst numerous districts is assumed to take longer than a unilateral decision to return to local production of public goods. This has the effect of increasing district j's bargaining power compared to central government. Districts know the number of periods between elections, and form their expectations about the next period's allocation based on current and past allocations. The structure of the game is as follows:

steps **Origination**

0. The game originates.
1. Central government invites all decentralized districts j to join the "club" of centralized provision of public goods, and offers to allocate g_j. The offer will only take effect in the following period.
2. Decentralized districts j accept or reject the offer.

Periods 1 to 4

3. Central government allocates g to all cooperating districts. Local government allocates g to all non-cooperating districts. All districts under both regimes observe their allocations and all V_j's are realized.
4. Districts under central government choose to remain or defect to local government based on their centralized allocation of public good g. In districts under local government the decentralized equilibrium persists.



5. Steps (3) and (4) repeat during periods 2, 3, and 4.
6. The game repeats from step (1).

The first three periods consist of decisions over allocation and cooperation/defection, with central government making new offers at the end of period four. As the game is symmetric for all districts j, if one district chooses cooperation then all do, and if one district chooses decentralized provision then all do. The fact that central government makes the offer (i.e. agenda-setting) gives it a structural advantage which appears to be realistic and in keeping with stylized facts from around the world (see discussion below). But it is important to note that district j has a significant advantage too – its ability to break agreement unilaterally at any time. Between these two aspects of the model the latter would seem to be less realistic, making the model biased in favor of the periphery.

With Credible Commitment

Begin assuming constitutional arrangements such that central government can credibly commit to g_j from the outset. This could take the form, for example, of allowing districts full legal redress when the center breaks its promises. Under such assumptions, our game is a straightforward variation of the well-known "ultimatum game", the solution to which is a standard result in game theory.

Proposition 1: *If $k_j = 0$, $V_j = V_j^D = \underline{V}_j$. The center appropriates the entire efficiency gain from centralization.*

This is easily proven: District j has no incentive to accept a lower allocation than it receives under decentralization, and thus its payoff space has lower bound V_j^D.[9] Central government has no incentive to offer more than the $V_j^D+\varepsilon$ necessary to obtain j's agreement (where ε is the smallest possible increment). Equilibrium thus occurs at point B in figure 1.

Allowing k_j to take on nonzero values increases central government's bargaining power at the expense of j. At cost k_{j1}, the default allocation set $(\underline{V}_j,\underline{V}^*)$ shifts leftwards, suggesting an equilibrium at E. With high cost k_{j2}, $k_{j2} > k_{j1}$, the implied equilibrium shifts back to A, with j's welfare close to the origin. But j will not accept offers at A and E, as both are below V_j^D. Central government must offer a level of g_j such that $V_j \geq V_j^D$ in order to secure the agreement of j, and we return to point B on figure 1.[10] The result implies that district j can never improve on its decentralized optimum, V_j^D, despite the center's cost advantage in service provision, credible commitment, and the possibility of accurate preference assessment by the center. Only district c can improve its welfare under central government. The presence of credible commitment, however, does keep j's welfare from falling below V_j^D despite non-zero transition costs.

With Limited Commitment

If the constitution places fewer constraints on central government's actions, then the center's ability to commit credibly will be curtailed. Suspending credible commitment changes the problem significantly. If commitment is completely absent and all parties know this *ex ante*, districts will not agree to centralize as individual districts' expected allocation will be less under

---

[9] For ease of expression, I refer hereafter to g and V interchangeably as the *allocation* received under central or local government, although in strict terms g refers to the allocation and V to the resulting welfare.

self-interested central government than under decentralization. Local government will prevail. Under different types of limited commitment, however, central government is possible.

The concept of limited commitment is problematic, however, as different limitations may inherently conflict with the very concept of a commitment that is credible. Commitment with uncertainty, where the center commits to an agreed allocation of public goods which it can provide only with a given probability, is one such example.[11] More generally, any form of limited commitment where the object of the commitment – in this case a level of g_j – cannot be fully specified in advance should not be regarded as a commitment in the formal sense. I focus instead on commitment that is limited in time rather than in kind. For the sake of simplicity I examine commitment limited to one period in a four-period game. Such commitment is both credible and specifiable, but limited in that parties may only make promises about outcomes one period in advance. This has practical relevance to the extent that it mimics negotiation in an uncertain political climate with shifting alliances. Other, more sophisticated forms of limiting commitment are possible, but for the sake of brevity I do not consider them here.

Proposition 2: *The equilibrium solution to the repeated Nash game with limited commitment is for central government to offer district j an allocation such that*

$V_j = V_j^D + 1\tfrac{5}{6}k_j$ in period one, $V_j = V_j^D - \tfrac{1}{3}k_j$ in period two, $V_j = V_j^D - \tfrac{1}{2}k_j$ in period three, and $\underline{V_j} = V_j^D - k_j$ in period four.

The proof is as follows, and is illustrated in figure 2a. The game occurs over four-period cycles where agreement is implemented in period one, and negotiations over the following cycle are conducted in period four.[12] Periods one to four thus represent the continuing sequence of plays where a stable equilibrium may be found. Analyze the sequence of plays in reverse, beginning with period four, for a repeated-game equilibrium. Once central government is

---

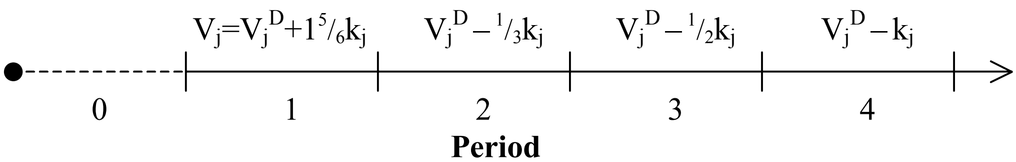
[10] Note that this may entail a lower level of g_j than under decentralization, as the unit cost of g may now be lower.
[11] *i.e.* $(\pi g_j + (1-\pi)g_{-j})$, where g_{-j} is different from g_j and π is a probability, $\pi \in [0,1]$.
[12] I consider this feature realistic, but the results are not sensitive to it.

implemented, j will defect if $V_j < \underline{V}_j$, as by defecting it can achieve $\underline{V}_j$ immediately and V_j^D thereafter. Hence central government will offer $\underline{V}_j = V_j^D - k_j$ in period four. In period three, however, the center must offer $V_j > \underline{V}_j$, as an allocation of $\underline{V}_j$ in period three implies the same in period four and j is better off defecting. Its decision to cooperate or defect can be characterized as $2V_j = 2V_j^D - k_j$, and the center must offer at least $V_j = V_j^D - ½k_j$ for j to cooperate. The offers for periods two and one are derived by the same logic.[13]

Figure 2

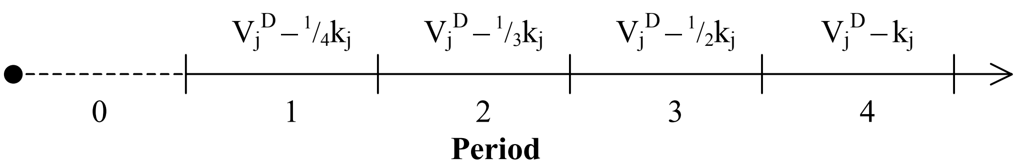
(a) With Limited Commitment

Allocation (in welfare terms)



(b) Without Commitment

Allocation (in welfare terms)



Limiting commitment in this way thus alters the stream of allocations that district j obtains from central government from an even pattern to one where public goods are front-loaded in the first period and then decrease steadily through the cycle.[14] Aggregate welfare over the cycle is equal to that under local government, as well as that under central government with credible commitment. But the temporal distribution changes significantly. Once again, district j cannot improve on its decentralized optimum despite the center's cost advantage and the ability

---

[13] This is easily derived by equating $4V_j^D$ to the stream of centralized allocations.

[14] Such variation over the electoral cycle mirrors the political business cycle literature (*e.g.* Alesina and Roubini, 1992), although derived from a different starting point.

to elicit accurate information on preferences, and only district c gains from centralization. But the presence of limited commitment once again keeps j's welfare from falling below $4V_j^D$ over the cycle. Note that V_j rises with the cost of transition, leaving less for central government to appropriate for itself. Note also that the solution's parameters depend on the periodicity of the game, and that extending or compressing its temporal structure will increase or decrease equilibrium allocations accordingly.

When the Center Can Renege

In many countries the question of central government submitting itself to an enforceable commitment, even a limited one, may be quite unrealistic. By definition, the transition from local to central government involves not just a change in fiscal regime but a fundamental change in the allocation of political power. Whereas before centralization the residents of j administered their own affairs, afterwards it is the central government that holds political power and administers resources on their behalf. They are the government, they make decisions, they uphold rules as they see fit. In countries where the legal and constitutional instruments for enforcing the center's commitment are not available to counterbalance the pure political power of the center, making an *ex ante* commitment on allocation bundles which central government is bound to honor may not be possible. Where checks and balances are weak, central government will have every incentive and complete liberty *ex post* to renege on its promise and increase its own allocation, and will face no sanction for doing so. Hence suspend constitutional guarantees in favor of the periphery, and allow the center to renege.

Proposition 3: *Where central government can renege on its commitment, district j's allocation over the four-period cycle will be such that $\Sigma V_j = 4V_j^D - 2\,{}^1\!/_{12}k_j$. Districts will be worse off under centralization than under decentralization.*

The proof is straightforward. Once district j has joined central government in such a setting, we can expect the allocation in period one to fall to $V_j = V_j^D - \frac{1}{4}k_j$, with allocations in periods two to four remaining the same as before (see figure 2b). Under the logic explained above, district j will have no incentive to defect from centralization in any given period, but the center can renege on any offers of front-loaded benefits. Hence in a context of a strong central government and weak countervailing powers brought about by a weak institutional framework, self-interested central government will systematically under-invest in public goods in non-central districts by an amount that depends on transition cost k.

But this outcome depends on the center essentially fooling district j, convincing it to join central government and incur potential cost k in the absence of guarantees that the agreed V_j will be provided. Why would localities agree to such a game? I note first that district j will not agree to such a game if accurately characterized *ex ante*. That it finds itself in such a situation is a product of the center changing the rules in mid-game, or its own ignorance or mistake. But whatever the cause, assume path dependency obtains and in a given period district j finds itself in the midst of an inherited, welfare-inferior centralization scheme. The question then becomes: why does the equilibrium persist?

With the payoff structure of figure 2b, j has no incentive in a given period to return to decentralization as its welfare will immediately fall in that period. Over several periods, of course, a short-term loss will lead to a long-term gain, and j should defect. But timing may be crucial. Elected officials in j – those responsible for the decision to defect – face a short time horizon given by the electoral cycle, and may have too high a discount rate to incur the cost of a transition which will mainly benefit future politicians. If their electoral cycle does not coincide with that of central government, they might prefer to wait for a general election in the hope of faring better under new leadership. Or they may take time to settle into office and comprehend their situation – and as the payoff to defection declines over time, they may not be ready to make such a decision until it is no longer worthwhile.

External factors may also intervene. Defection may be perceived as less prestigious than remaining in central government, and might leave elected officials open to charges of political weakness, poor negotiation skills, etc. Lastly, the center may offer local leaders opportunities for graft, future allocations of public goods, or other benefits if they cooperate. These possibilities are all beyond the confines of the model, and some violate its assumption of rationality. I will not pursue them further except to indicate that when surveying countries' fiscal arrangements, a number of complex factors may help explain the persistence of low centralized equilibria that bring few benefits to the periphery.

4. Conclusions

In this model of centralized government with legislative bargaining, districts on the periphery can never improve upon their decentralized allocations, even when credible commitment is possible. This is despite the fact that central government has access to accurate information on local preferences, and is capable of providing public services more cheaply than local government. And without commitment districts are unambiguously worse off, as the center hoards the resource pool.

These results provide straightforward answers to the questions posed at the outset. Why so much centralization? Because it is in the interests of those who live in the capital. They have residual claims on public resources, and they make the laws of the land. They benefit directly from a highly centralized government with weak constitutional guarantees for lower-level districts. And they hold the power to so arrange affairs. Furthermore, once central provision of a given service is established, the center's incentive is to renege on initial promises and drive local allocations lower. Thus the center beggars the periphery, not once but continually.

This in turn explains decentralization's indifferent empirical record. While dozens of countries have announced decentralizing reforms, it is likely that many of these have been undermined from within. This is not to impugn the honesty of decentralization's advocates, but rather to underline the obstacles they face. Even when decentralization is promulgated with genuine enthusiasm by a country's leadership, its ultimate success depends upon the substantial and sustained cooperation of politicians and bureaucrats throughout central government. But these are the people with least interest in its success. They benefit from the residual power they hold, and do not want to see it, or resources, dispersed. Decentralization requires them to undermine their own position by handing power and resources over to the periphery. Our results imply that they will not collaborate, deploying obstructive strategies to thwart reformer's intent. This seems to fit the facts from dozens of countries that Rondinelli *et al.*, Smoke, Piriou-Sall and others survey. Decentralization becomes one more policy promise on which the center reneges, and the old pattern of centripetal accumulation continues.

Note that all of these dynamics follow from our assumption that central government is located in a particular place – the capital – inhabited by rational utility maximizers. Although strictly arbitrary, this assumption seems more reasonable than the obvious alternatives: a central government that is dispersed throughout the country, or *capitalinos* who are broadly altruistic. It also mirrors an important empirical regularity: across the world capitals are amongst the richest and best developed cities in their respective countries.

Now return for a moment to the broader decentralization debate. As several authors have noted (Ostrom *et al.*, Rondinelli, *et al.*, Slater 1989), both concepts – centralization and decentralization – are unstable in the literature. Hence the dozens of studies that begin with multiple definitions of "decentralization", inevitably including under the same rubric such disparate phenomena as devolution, delegation, deconcentration and privatization (*e.g.* Rondinelli *et al.*; Ostrom *et al.*). These four concepts – to go no further – are fundamentally different, and to treat them as synonymous drains the term "decentralization" of any useful meaning. The resulting conflation of data from dissimilar social experiments leads inevitably to indeterminate, contradictory evidence. This goes a long way towards explaining why scores of decentralization studies have yielded so little knowledge about what it can and cannot achieve.

It is here that the most important contribution of this paper lies: in its characterization of centralized and decentralized government, and the fundamental difference between the two. As conceived in the model, the key difference between the two regimes is the question of *residual power*. In the spirit of Alchian and Demsetz (1972), Hart (1995), Williamson (1995) and others, residual power here refers to authority over all resources which are not explicitly allocated. In a democratic system, many public resources will be explicitly allocated to particular uses and places as a result of political negotiation. Those with authority to dispose freely of all remaining resources hold residual power. The key question of decentralization is thus where residual power lies.

Decentralization can accordingly be defined as a division of the national resource pool amongst a country's subnational districts, and the allocation of residual powers to independent and accountable governments in each. Residual power is spread throughout the system, even if resources are distributed unevenly. Centralization, by contrast, is where both resources and residual power are consolidated into national-level aggregates. This vastly increases the premium to holding residual power, and vastly increases the bargaining power of the district where it lies. In this context it is not surprising that the capital in a centralized system will benefit disproportionately from the division of the pie.

The lesson that emerges is a simple one: residual power must lie in the periphery in order for a system to be decentralized. Where this is not the case, the country in question is not decentralized and should not be studied as if it were. This is true regardless of whether it has been deconcentrated, delegated, privatized, or any of a number of other categories that fill the public management taxonomy.

Lastly, the most interesting results that emerge from the model hinge upon the question of credible commitment. In the real world, the mechanisms used and the degrees of commitment achieved appear to vary greatly across countries. In countries without a strong and independent judiciary, where the constitution does not protect districts, and/or where institutions are too weak to oppose the political will of the executive, the model would predict resource accumulation in the capital, with considerably less accruing to the periphery. Nigeria, Mexico, Egypt, Thailand, and until recently Bolivia would seem to be a few examples. Elsewhere, however, the mechanisms of government seem designed to produce a different outcome. In Europe for example, regional aid and structural funds are explicitly designed to favor poorer countries and regions, which on the whole receive more EU funds than they pay in. Indeed, the fact that European integration is advancing slowly, within the framework of institutions where national interests are finely balanced and an elaborate set of side agreements and opt-outs exist, suggests that nations are aware of the danger of central confiscation and keen to prevent it. Similar claims can be made for the distribution of federal funds among US states and German *länder,* where the rights and privileges of states and *länder* are enshrined in law and safeguarded by the constitution.

The fact that all three of these examples are federations of strong regions with comparatively weak centers, and the previous examples are the opposite, suggests that a robust legal and institutional framework can help to protect the power of the periphery against central encroachment. The unification of Germany and attendant relocation of the capital to Berlin could be seen in this context as a social experiment, a tug-of-war between an entrenched framework favoring the regions and an ascendant "new" capital which may eventually unite the economic, cultural and social elite of the nation. A number of past and present wars may also be understood in this light. The North and South American wars of independence, wars of decolonization, the US Civil War, and the recent wars of Yugoslav disintegration, may be viewed to varying degrees as violent attempts by regions to throw off the yoke of central governments that ignored their preferences and expropriated their resources.

Bibliography

Alchian, A. and H. Demsetz. 1972. "Production, Information Costs and Economic Organization." *American Economic Review*, 62:777-95.

Alesina, A. and N. Roubini. 1992. "Political Cycles in OECD Economies." *Review of Economic Studies*, LIX:663-88.

Bardhan, P. 2001. "Notes on Decentralization." Berkeley: Manuscript.

Bardhan, P. and D. Mookherjee. 1998. "Expenditure Decentralization and the Delivery of Public Services in Developing Countries." Working Paper No. C98-104. Berkeley: Center for International and Development Economics Research.

— 1999. "Relative Capture of Local and Central Governments: An Essay in the Political Economy of Decentralization." Berkeley: Manuscript.

—

Bell, C.R. 1989. "Between Anarchy and Leviathan: A Note on the Design of Federal States." *Journal of Public Economics*, 39:207-221.

Becker, G. 1983. "A Theory of Competition Among Pressure Groups for Political Influence." *Quarterly Journal of Economics,* 98: 371-410.

Besley, T. and S. Coate. 1999. "Centralized versus Decentralized Provision of Local Public Goods: A Political Economy Analysis." NBER Working Paper 7084. Cambridge, MA: National Bureau of Economic Research.

Brennan, G. and J. Buchanan. 1977. "Towards a Tax Constitution for Leviathan." *Journal of Public Economics,* 9: 301-318.

— 1978. "Tax instruments as Constraints on the Disposition of Public Revenues." *Journal of Public Economics,* 89: 301-318.

— 1980. *The Power to Tax.* Cambridge: Cambridge University Press.

Breton, A. 1996. *Competitive Governments*. Cambridge: Cambridge University Press.

Breton, A. and A. Scott. 1978. *The Economic Constitution of Federal States*. Toronto: University of Toronto Press.

Buchanan, J. 1975. *The Limits of Liberty.* Chicago: University of Chicago Press.

Campbell, T. 2001. *The Quiet Revolution: The Rise of Political Participation and Leading Cities with Decentralization in Latin America and the Caribbean*. Pittsburgh: University of Pittsburgh Press.

Cheema, G. S. and D. A. Rondinelli. (eds.). 1983. *Decentralization and Development: Policy Implementation in Developing Countries.* Beverly Hills: Sage Publications.

Conyers, D. 1984. "Decentralization and Development: A Review of the Literature." *Public Administration and Development*, 4: 197-97.

Crook, R.C. and A.S. Sverrisson. 1999. "To What Extent Can Decentralized Forms of Government Enhance the Development of Pro-Poor Policies and Improve Poverty-Alleviation Outcomes?" Manuscript.

Dahl, R. 1989. *Democracy and Its Critics*. New Haven: Yale.

Downs, A. 1957. *An Economic Theory of Democracy.* New York: Harper and Row.

Dryzek, J. S. 1996. "Political Inclusion and the Dynamics of Decentralization." *American Political Science Review*, 90:475-87.

Dunkerley, J. 1984. *Rebellion in the Veins: Political Struggle in Bolivia 1952-82.* London: Verso.

Faguet, JP. 2002. "The Determinants of Central vs. Local Government Investment: Institutions and Politics Matter", DESTIN Working Paper No. 02-38, London School of Economics.

— 2004. "Does Decentralization Increase Responsiveness to Local Needs? Evidence from Bolivia." *Journal of Public Economics, 88: 867-893.*

Gray, G. and C. H. Molina. 1997. "Popular Participation and Decentralization in Bolivia: Building Accountability From the Grass Roots." La Paz: Manuscript.

Hegel, G.W.F. 1967 [1821]. *Philosophy of Right*. trans. T.M. Knox. New York: Oxford University Press.

Hart, O. 1995. *Firms, Contracts and Financial Structure.* New York: Oxford University Press.

Klein, H. 1993. *Historia de Bolivia.* La Paz: Libreria-Editorial Juventud.

Levy, F. and E.M. Truman. 1971. "Toward a Rational Theory of Decentralization: Another View." *American Political Science Review*, 65:172-179.

Madison, J., A. Hamilton and J. Jay. 1961. *The Federalist Papers*. New York: New American Library.

Manor, J. 1997. Lecture given at "Technical Consultation on Decentralization for Rural Development." Rome, 16-18 December 1997.

— 1999. The Political Economy of Democratic Decentralization. Washington, DC: The World Bank.
—

Niskanen, W. A. Jr. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine-Atherton.

Oates, W. 1972. *Fiscal Federalism.* New York: Harcourt Brace.

Ostrom, E., L. Schroeder and S. Wynne. 1993. *Institutional Incentives and Sustainable Development: Infrastructure Policies in Perspective.* Boulder: Westview Press.

Panizza, U. 1999. "On the Determinants of Fiscal Centralization: Theory and Evidence." *Journal of Public Economics*, 74: 97–139.

Piriou-Sall, S. 1998. "Decentralization and Rural Development: A Review of Evidence." Washington, DC: Manuscript.

Pommerehne, W.W. and F. Schneider. 1978. "Fiscal Illusion, Political Institutions, and Local Public Spending." *Kyklos*, 31:381-408.

Posner, R. 1974. “Theories of economic regulation.” *Bell Journal of Economics and Management Science,* 5: 335-358.

Putnam, R. D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy.* Princeton: Princeton University Press.

Rondinelli, D. A., G. S. Cheema and J. Nellis. 1983. “Decentralization in Developing Countries: A Review of Recent Experience.” World Bank Staff Working Paper No.581. Washington, DC: World Bank.

Rousseau, J.J. 1968 [1762]. *The Social Contract.* trans. M. Cranston. New York: Penguin Books.

Rubinfeld, D. 1987. “The Economics of the Local Public Sector.” In Auerbach, A. and M. Feldstein (eds.), *Handbook of Public Economics*. Oxford: North-Holland.

Samoff, J. 1990. “Decentralization: The Politics of Interventionism.” *Development and Change*, 21:513-30.

Shah, A. 1998. “Balance, Accountability and Responsiveness: Lessons about Decentralization.” Policy Research Working Paper 2021. Washington DC: World Bank.

Smith, B. C. 1985. *Decentralization: The Territorial Dimension of the State*. London: George Allen & Unwin.

Smoke, P. 2001. “Fiscal Decentralization in Developing Countries: A Review of Current Concepts and Practice.” Democracy, Governance and Human Rights Programme Paper No. 2. Geneva: UNRISD.

Stigler, G. 1971. “The Theory of Economic Regulation.” *Bell Journal of Economics and Management Science*, 2: 3-21.

Tiebout, C. M. 1956. “A Pure Theory of Local Expenditures.” *Journal of Political Economy,* 64:416-24.

Tocqueville, A. de. 1994 [1835, 1840]. *Democracy in America*. P. Bradley (ed.). trans. H. Reeve. London: Everyman’s Library.

Treisman, D. 1999. “Political Decentralization and Economic Reform: A Game-Theoretic Analysis.” *American Journal of Political Science*, 43: 488-517.

Tullock, G. 1965. *The Politics of Bureaucracy*. Washington, DC: Public Affairs Press.

United Nations Development Program (UNDP). 1993. *Informe Sobre Desarrollo Humano 1993*. Madrid: CIDEAL.

Wallis, J. J. and W. E. Oates. 1988. “Decentralization in the Public Sector: An Empirical Study of State and Local Government.” In H.S. Rosen (ed.). *Fiscal Federalism: Quantitative Studies*. Chicago: University of Chicago Press.

Williamson, O. E. (ed.). 1995. *Organizational Theory: From Chester Barnard to the Present and Beyond*. Expanded Edition. New York: Oxford University Press.

World Bank. 1994. *World Development Report: Infrastructure for Development*. New York: Oxford University Press.

JEAN-PAUL FAGUET is Lecturer (Assistant Professor) in the Political Economy of Development at the Development Studies Institute, London School of Economics. He is also Programme Director of the MSc in Development Management, as well as head for Latin America of the Crisis State Programme located there. Dr Faguet's teaching and research focus on political economy, new institutional economics, democratic theory, and development economics. Particular interests include decentralization, the interactions between civil society and local government effectiveness, how civic cooperation can degenerate into social conflict, and spatial patterns of politics and violence at the subnational level, especially in Latin America. ADDRESS: Development Studies Institute, London School of Economics, Houghton Street, London WC2A 2AE, UK [email:j.p.faguet@lse.ac.uk]