

On The Evolution of Fiscal Federalism: Theory and Institutions

INTRODUCTION

In the development of economic ideas, it has sometimes been the case that major, disruptive events in the real world have challenged the explanatory power and normative implications of existing economic theory and have thereby set in motion a process of rethinking and recasting of the theory itself. The Great Depression and the consequent Keynesian Revolution is perhaps the most dramatic of such episodes. But this has also been true elsewhere and is clearly evident in at least one strand of the recent evolution of the theory of fiscal federalism. Indeed, there is explicit reference in the literature to a newly emerging “second-generation theory of fiscal federalism” (e.g., Qian and Weingast (1997)).

This new body of work on fiscal federalism has its roots (at least in part) in a series of fiscal crises that were largely driven by destabilizing fiscal behavior at decentralized levels of government. In several countries (most notably perhaps Argentina and Brazil), powerful provincial authorities effectively “raided the fiscal commons” by running huge deficits and accumulating enormous stocks of debt that resulted ultimately in a national financial crisis and in a bailout by the central government. In their efforts to understand the nature of these crises, several economists have developed a sequential game-theoretic view of the process that produces such debilitating outcomes. This has produced a new perspective on fiscal federalism that represents an intriguing interplay between the observed dysfunctional behavior of federal fiscal systems in several countries and modern approaches to understanding economic behavior in a setting of strategic behavior.

At the same time, however, there has emerged a second strand of new theoretical research on fiscal federalism that is, in a sense, more conventional. Lockwood (2006) has recently characterized this as “the political economy approach to fiscal decentralization.” The source of this work is some basic dissatisfaction with the formulation of the traditional theory of fiscal federalism. Introducing some basic assumptions concerning the behavior of public agents and specifying more carefully the system of political institutions, this second strand of new theory offers an enriched view of

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the tradeoff in a multi-level system of government between the coordination of public decisions of “local” authorities and the responsiveness of outcomes to local preferences.

In this paper, I want to review this evolution of the theory of fiscal federalism and offer some thoughts on the implications of these new views for the structure and functioning of federal fiscal systems. This will provide an opportunity to draw on the comparative experience of certain countries, an experience that provides some valuable lessons for intergovernmental fiscal behavior. This will also provide a context for a re-examination of one of the basic instruments of federal finance: intergovernmental grants. These grants have, in principle, a basic role to play in fiscal federalism, but, as the literature has made clear, they have been the source of some serious malfunction in federal fiscal systems. Finally, I want to explore briefly the development and spread of some relatively recent fiscal institutions (such as “rainy-day funds”) that have helped to improve the performance of state and local governments. So-called “laboratory federalism” has been busily at work in the United States producing some important innovations in public policy, both in the fiscal and regulatory realms.

THE TRADITIONAL THEORY OF FISCAL FEDERALISM

To provide the backdrop for the story of this evolution, we need to return to what I might call the traditional theory of fiscal federalism (or, as some have called it, the “first-generation theory of fiscal federalism”). The traditional economic case for fiscal decentralization is based on the potential welfare gains it promises from a more efficient allocation of resources in the public sector. Among the classes of public goods, economists have distinguished the case of “local public goods.” This subset of public goods consists of

public services whose consumption is limited geographically to those residing in particular jurisdictions. In a federal fiscal system, decentralized levels of government are in a position to determine the levels of output of such goods in accordance with local preferences and costs. Such differentiation in local outputs of public services promises gains in economic welfare relative to a centralized outcome involving more uniform levels of public outputs across jurisdictions.

On the Decentralization Theorem

Many years ago in *Fiscal Federalism* (1972), I formalized this idea in a proposition I referred to as “The Decentralization Theorem.” The basic point is that if there are no cost advantages (economies of scale) associated with centralized provision, then a decentralized pattern of public outputs reflecting differences in tastes across jurisdictions will be welfare enhancing as compared to a centralized outcome characterized by a uniform level of output across all jurisdictions. More precisely, I stated the theorem as follows

For a public good—the consumption of which is defined over geographical subsets of the total population, and for which the costs of providing each level of the good are the same for the central or for the respective local government—it will always be more efficient (or at least as efficient) for local governments to provide Pareto-efficient levels of output for their respective jurisdictions than for the central government to provide *any* specified and uniform level of output across all jurisdictions (p. 35).

While the proposition seems quite obvious, I thought it useful at the time to lay out a set of sufficient conditions for this result to hold. There has been some subsequent re-examination of the theorem that (among other things) questions certain of the premises. In particular, the theorem

rests on two strong assumptions. First, it assumes that outputs of public goods are determined so as to maximize the well-being of the constituents of the relevant jurisdiction. And, second, the theorem assumes that centralized provision results in the same level of public outputs in all jurisdictions. This, of course, need not be true. There is no reason, in principle, why a central government could not differentiate outputs of local public goods in response to the variation in demands and costs across jurisdictions (or for other, perhaps political, reasons).

I want to comment briefly on each of these assumptions. Much of the modern literature in public economics (including the new work on the theory of fiscal federalism) has explicitly rejected the first assumption on the grounds that it presumes “benevolent” behavior on the part of public agents. This literature looks more realistically at a setting that views public officials as conventional utility-maximizing entities with their own objective functions, who operate within a constellation of incentives and constraints that depends on existing political and fiscal institutions. I want simply to note here that one can get “approximately efficient” outcomes at local levels without assuming benevolence. In the widely used median-voter model, for example, electoral competition, resulting in median-voter equilibria, may produce outcomes that do not deviate very much from efficient ones (Wittman, 1989, 412–3).¹ There is a substantial empirical literature (in the U.S. at least) that finds that the median-voter model provides a pretty good description of outcomes in the state and local public sector (e.g., Inman (1978)). In particular, the median-voter

model has served as the basic framework for a large econometric literature that estimates demand functions for local public goods.² At any rate, my point here is simply that the first assumption in the theorem, if treated a little loosely, does not require benevolence on the part of public agents, only (reasonably) efficient outcomes.

The second assumption is that centralized provision of local public goods involves a uniform level of output across all jurisdictions. This makes the proof of the theorem easy and transparent. It effectively constrains the centralized outcome and rules out the efficient diversification of local outputs in accordance with local preferences and costs. But is such a condition a plausible and reasonable one? The early literature suggested two arguments in its support. First, there is an information issue. It is difficult (or, more precisely, costly) for a central government to obtain the information needed to fashion local outputs in accordance with local tastes and cost conditions. Local governments are closer to their constituencies and presumably have more direct access to knowledge of local tastes and other circumstances pertaining to the local provision of the service.³

There is a second issue that is more political in nature. It may not be politically feasible for a central government to provide higher levels of public services in some jurisdictions than in others. This might be seen as simply unfair. In short, central governments may face a kind of “equal treatment” political constraint that pushes them in the direction of uniformity in the central provision of local public services.

These obstacles to an efficient centralized provision of local public goods have

¹ Bergstrom (1979) provides a rigorous treatment of the conditions under which a median-voter outcome is Pareto efficient.

² For reviews of this econometric literature, see Rubinfeld (1987) and Oates (1996).

³ Cremer, Estache, and Seabright (1996) point out that the acquisition of information is endogenous; there is, thus, no reason, in principle, why a central authority cannot obtain the requisite information on local preferences and costs. Their observation is that the failure of central authorities to obtain such information must indicate that it is of less value to central, than to local, public agents.

long been recognized. Indeed, offering his observations in the 1830s on the newly formed U.S. federal system, Alexis de Tocqueville noted that “In great centralized nations the legislator is obliged to give a character of uniformity to the laws, which does not always suit the diversity of customs and of districts; as he takes no cognizance of special cases, he can only proceed upon general principles . . . since legislation cannot adapt itself to the exigencies and the customs of the population, which is a great cause of trouble and misery” (Vol. I, p. 163).

There are, moreover, plenty of examples of this in practice. In the United States, for instance, much of the major federal environmental legislation prescribes uniform national standards for environmental quality, in spite of often radically different local circumstances. The literature on “environmental federalism” has examined this issue and makes a strong case, on grounds of economic efficiency, for more local differentiation in environmental measures (e.g., Oates (2002a)). In one such study, Dinan, Cropper, and Portney (1999) examine the benefits and costs of controlling drinking water contaminants under the U.S. Safe Water Drinking Act. The Act requires the U.S. Environmental Protection Agency (EPA) to set uniform national standards for drinking water quality. Because of economies of scale, the costs per household of local water treatment vary enormously across water districts of different sizes. For the particular contaminant they study, Dinan et al. find that there are very large welfare losses in the smaller water districts (several hundred dollars per year per household) resulting from their having to meet the stringent

national standards. Studies of the “Arsenic Rule” reach similar findings. This measure, introduced in 2001, reduced the allowable concentrations of arsenic in drinking water. Existing studies suggested that the measure would provide a minuscule reduction in risk. While such a provision might have passed a benefit–cost test in the very largest water districts (like New York City, where the cost was less than \$1 per annum per household), it clearly involved large welfare losses in smaller water districts, where the estimated annual costs were over \$300 per household (Oates, 2002b). The point here is that in spite of such large potential gains in welfare from an appropriate set of decentralized standards, federal officials (legislators and administrators) maintained their commitment to uniform national standards.

The case of standards for drinking water is not an isolated example. Under one of the early and major pieces of environmental legislation in the United States, the Clean Air Act of 1970 directed the EPA to set uniform national standards for ambient air quality. The resulting National Ambient Air Quality Standards (NAAQS), which must be met everywhere in the U.S., are still with us, again in spite of enormous differences in benefits and costs across jurisdictions. A “one size fits all” approach is quite pervasive in federal measures. Thus, the assumption that centralized provision of local public goods involves a uniform level of output is not without some empirical support. Admittedly, there are instances where this is not true, where, for example, various sorts of pork–barrel measures bring higher “outputs” of certain public programs to some jurisdictions than to others.⁴

⁴ On this basic point, I would take issue with Lockwood’s claim (2006) that the evidence shows that the “uniformity assumption” of centralized provision “. . . is clearly incorrect” (p. 38). His evidence is that central spending for specific local services varies across jurisdictions. As I have indicated in the above discussion of environmental regulation, this is more than just a matter of public expenditure. Moreover, differentials in central spending across localities is not fully persuasive. The cost functions for local services vary (sometimes quite significantly) across jurisdictions so that a policy of equalizing public *outputs* would require variation in levels of local spending. The issue is more complex than Lockwood suggests.

On the Magnitude of the Welfare Gains from Fiscal Decentralization

The preceding examples from the sphere of environmental regulation suggest that there can be large potential gains in welfare from tailoring measures to local circumstances—in these cases differences in the costs across localities of attaining the standards. However, even where costs do not differ, there can be substantial welfare gains from local provision stemming from the variation in the demand for local services across jurisdictions. Where demands for local services differ, the potential welfare gains vary directly with the magnitude of this variation and inversely with the price elasticity of demand (Oates, 1997). Since a whole host of econometric studies of demand functions for local public services finds that these demands are highly price inelastic (with estimated price elasticities on the order of -0.4), it is not surprising to find that deviations from efficient levels of local outputs result in large welfare losses. In one early study of school finance, Bradford and Oates (1974), exploring a hypothetical consolidation of New Jersey school districts, found very large welfare losses associated with the loss of local determination of levels of school spending.

The literature, although it is not very extensive, has suggested that the existing (and potential) welfare gains from fiscal and regulatory decentralization can be quite large. These welfare gains have their source both in the variation in demand for local services across jurisdictions and in differing costs of providing these services. However, these gains admittedly depend on the presumption that local provision will more closely approximate efficient outcomes.

Intergovernmental Fiscal Institutions

The traditional theory of fiscal federalism, thus, envisions a multi-level system

of government, with each level providing the efficient output of public services to its constituency. In short, the central government provides national public goods and appropriately defined decentralized governments provide “local” public services. But this is too neat and tidy. Government is costly, and there can hardly be a distinct level of government corresponding to the patterns of benefits and costs of each of the many public services. There will obviously be cases where decentralized levels of government find themselves providing local outputs that have spillover effects on the welfare of residents elsewhere. Local roads, for example, will be used to some extent by visitors or people passing through the area.

The traditional theory of fiscal federalism deals with this issue in a straightforward way. Following the Pigouvian tradition, the theory prescribes that where there are spillover benefits associated with the provision of local public goods, the central government should introduce matching intergovernmental grants that serve to internalize the external benefits. The grants will provide the necessary inducement to local officials to extend provision of the local service to the socially efficient level.

The literature also makes the case for a second form of intergovernmental grants, in this case largely on equity grounds. Many countries employ unconditional, lump-sum grants for purposes of fiscal equalization. These grants provide additional revenues based on “taxable capacity” and sometimes on “fiscal need.” The basic idea is to provide assistance to jurisdictions that are fiscally disadvantaged in terms of having a relatively small tax base and/or relatively high costs of providing needed services. In contrast to the matching grants discussed above, grants for purposes of fiscal equalization should presumably take an unconditional form: they are simply intended to increase the resources of disadvantaged jurisdictions.

There are also some efficiency dimensions to the case for equalizing grants involving efficient migration behavior and the creation of a "level playing field."⁵ I will return to this issue of intergovernmental grants later in the paper; I need to introduce it here because of its important role in the traditional theory of fiscal federalism.

In addition to the case on static efficiency grounds, the literature also provides an argument in support of fiscal decentralization in terms of encouraging innovation and the discovery of new, improved forms and instruments of public policy. Fiscal decentralization promotes experimentation with new ideas for public policy, experimentation that can benefit the larger polity in terms of learning what kinds of measures work and do not work. This is so-called "laboratory federalism," to which I shall also return later in the paper.

In summary, the traditional theory of fiscal federalism provided a perspective on intergovernmental fiscal structure that showed how fiscal decentralization could improve the functioning of the public sector. The application of the theory (as is often the case) was not always straightforward. When it comes to the actual determination of precisely what public services different levels of government should actually provide, there can be real ambiguities. But the theory does at least provide some guidelines for thinking about all this.⁶ Moreover, there are certainly a number of sticky problems that must be addressed. For example, as Charles McLure (1967) showed in his early and seminal work, certain forms of taxation at decentralized levels of government can be "exported" and can be the source of various kinds of distortions in

economic activity both in the public and private sectors. The traditional theory, however, has a basically optimistic tone: it sees fiscal decentralization as making a clearly positive contribution to the functioning of the public sector. In contrast, some of the more recent literature (the first strand) addresses a decidedly "dark side" to fiscal decentralization. To this we will turn next (following a brief aside on the Tiebout model).

A Note on the Tiebout Model

In my brief recapitulation of the traditional theory of fiscal federalism, I have not even mentioned what many public economists see as the cornerstone of local public finance: the Tiebout model. In his famous paper in 1956, Tiebout outlined (in only nine pages!) a model of local finance in which mobile households select a community of residence based on their demand for a local public good; in the model, "Tiebout sorting" provides an analogue to a private market resulting in an efficient allocation of resources in the local public sector. Since individuals in the Tiebout model are not constrained in their choice of a community of residence by the location of their workplace, the Tiebout model has come to be seen as a model of "metropolitan finance." Many of us see it as providing a useful description of fiscal behavior in a metropolitan setting in which individuals may work in the center city but have a wide choice among suburban municipalities in which to reside.⁷

Some scholars see the Tiebout model as the centerpiece of the theory of fiscal decentralization. This, I believe, is an incorrect view. The gains from fiscal decentralization embodied in the Decen-

⁵ For an excellent treatment of equalizing transfers, see Boadway (2006).

⁶ For an interesting and useful assignment of specific public services (and tax bases) to different levels of government, see McKinnon and Nechyba (1997).

⁷ The Tiebout model has meant different things to different people! For a review of "The Many Faces of the Tiebout model" and its evolution in celebration of its 50th birthday, see Oates (2006).

tralization Theorem do not depend on the mobility of households. Even if there were no mobility whatsoever across jurisdictional boundaries (as envisioned in the theorem), there would still exist welfare gains from fiscal decentralization stemming from the interjurisdictional variation in demand and cost functions for local services. Tiebout sorting can increase these gains in welfare by allowing people with similar preferences to group together, but even without such sorting, there will exist potential gains from tailoring outputs to “local” circumstances. In short, the Tiebout model is not synonymous with the theory of fiscal decentralization.

NEW THEORETICAL PERSPECTIVES ON FISCAL FEDERALISM

There are, as I see it, two distinct new bodies of theory addressing fiscal federalism. The first (which calls itself “the second generation theory of fiscal federalism”) draws much of its motivation from the series of fiscal crises precipitated by perverse behavior at decentralized levels of government. The second, “the political economy approach to fiscal federalism,” represents a more conventional evolution of public-sector theory. Both approaches explore the structure of incentives embodied in federal fiscal and political institutions, but their basic concerns are somewhat different. I shall refer to them, respectively, as Strand One and Strand Two of the new theories of fiscal federalism.

Strand One directly challenges the traditional and largely favorable view of the role of fiscal decentralization. It contends that there are quite serious dangers (along with the real benefits) from

fiscal decentralization. In particular, the theoretical models in Strand One show how decentralized levels of government can have powerful incentives to “raid the fiscal commons” in ways that undermine the performance of the public sector and perhaps the entire economy.⁸ The destructive fiscal behavior envisioned in this work is not, incidentally, simply a matter of corruption.⁹ Its source is the very structure of incentives built into existing fiscal and political institutions. The concern is that these incentives can lead directly to perverse fiscal decisions that seriously impair the functioning of the government sector.

A basic element in Strand One is the concept of a “soft budget constraint.” Janos Kornai (1979, 1980) originally introduced the concept in his seminal work on the behavior of state-owned enterprises in socialist states. Kornai saw that these enterprises were insulated in a very basic way from the threat of bankruptcy: should they get into serious financial straits, they could count on help from higher authorities to bail them out of their financial difficulties. The term has now been broadened to encompass any entity that operates with the *expectation* that there is a “supporting organization” that will underwrite its financial losses (Kornai, Maskin, and Roland, 2003). In the context of the public sector, this involves a world in which governors of provinces or states and mayors of large cities can look to public authorities at higher levels (typically the central government) to bail them out of their fiscal problems of continuing deficits and a growing stock of public debt. Such an expectation of assistance obviously undercuts the incentives for more responsible fiscal behavior.

⁸ Prud’homme (1995) and Tanzi (1996), for example, called attention to specific ways in which fiscal decentralization can have detrimental effects on fiscal outcomes.

⁹ There is now a substantial and insightful theoretical and empirical literature on corruption in the public sector. Some of this work addresses the issue of whether or not corruption is likely to be a more serious matter at centralized or local levels of government. The debate on this matter, by my reading, has not yet reached a resolution. On this, see, for example, Shah (2006).

Where do such perverse expectations come from? The Strand One literature has typically adopted a sequential game-theoretic framework with which to explain this phenomenon (e.g., Wildasin, 1997; Qian and Roland, 1998; Goodspeed, 2002). In stage one of the game, the central government states that it will not come to the assistance of fiscally distressed decentralized governments. The issue is whether or not this claim is credible. In the second stage of the game, decentralized public agents must make a decision on the credibility of the center's position. There are often good reasons to find the center's pledge to be unpersuasive. First, the central government is presumably concerned with the welfare of its citizenry (if not for altruistic reasons, at least for the likelihood of re-election). The bankruptcy of a provincial or local government can have serious consequences not only for its residents; there may well be spillover effects on neighboring jurisdictions. In an explicitly political setting, governors or city mayors may be in a position to shift the blame for their fiscal calamity onto central officials. In such a setting, the very political survival of the incumbent center may depend on its providing aid to lower-level fiscal authorities.

At any rate, for a complex of reasons, decentralized public agents may decide in stage two of the game that the center's commitment to no-bailout is not credible. As a result, they can proceed in stage two of the game to run up fiscal deficits and their outstanding debt. (Alternatively, should decentralized officials find the center's no-bailout claim to be credible, the game ends at this point.) Confronted by the fiscal debacle at decentralized levels of government, the center must then, in stage three of the game, decide whether or not to come to their rescue with financial assistance. As we have discussed, there may well be compelling reasons (both economic and political) to do so.

Much of the Strand One literature explores the structural sources of soft budget constraints and how they might be reformed. At issue here are the specific elements in a political and economic environment that undermine fiscal discipline. This is obviously a complicated matter. The collection of papers in Rodden, Eskelund, and Litvack (2003) provides a fascinating and illuminating set of studies that suggest that soft budget constraints have a multiplicity of sources: existing fiscal institutions, the political system, the absence or poor functioning of certain key markets, and the specific history of the polity. There are lots of important lessons here. As Rodden points out, for example, soft budget constraints often arise in settings where fiscal responsibilities are ill defined. In some countries, it is unclear which level of government has the responsibility for providing certain critical services (such as health care or pensions)—or at least the responsibility for funding them. In such a setting, it may be perfectly reasonable for a governor or mayor to expect financial assistance from above. In brief, Rodden et al. find that "unclear or shared responsibilities have a cost in terms of accountability and incentives" (p. 16).

Likewise, systems of federal transfers and the use of debt finance can be sources of softness in budget constraints. In countries where decentralized authorities do not have much in the way of own revenues and rely heavily on transfers from above, a kind of "transfer dependency" can easily foster expectations of expanded central assistance in times of fiscal distress. In some instances, provincial and local governments have had direct access to the public banking system to absorb their debt issues.

The absence of a strong and healthy system of private markets is also conducive to soft budget constraints. Well-developed and efficient capital markets, for example, can serve to harden budget constraints by

the threat of higher borrowing costs and limited access to lending to governments that misbehave in fiscal matters. Similarly, a properly functioning land market will promote sound fiscal decision-making through the capitalization of superior or poor fiscal performance into local property values. As Weingast (1995) and others have emphasized, a strong system of private markets can itself contribute to a system of hard budget constraints.

History and the precedents it creates matter too. The U.S. experience is especially instructive on this point. Aside from its very early history, the United States has a clean record on strategic bailouts. Inman (2003) argues that this is largely the result of a specific historical episode that set a precedent that has served the country well. In the 1840s, there took place a wave of defaults involving eight states and the Republic of Florida that resulted from some unwise public investments in transportation and banking projects. The impacted states sought federal help to bail them out of their impasse. But the Congress said no: they were left to work themselves through processes of bankruptcy. This experience, Inman suggests, put an end to any real prospects for strategic fiscal bailouts in this country.

In sum, the work in Strand One of the new theory of fiscal federalism has focused on the issue of soft and hard budget constraints, where they come from, their implications for fiscal behavior, and how they can be hardened (Wildasin, 2004). Strand Two, although also concerned with fiscal and political institutions and the incentive structure they create, takes a somewhat different approach. Drawing on the formal political economy (and public choice) literature, it devotes much of its attention to legislative structure and electoral processes in trying

to understand the different kinds of fiscal outcomes produced under centralized and decentralized polities.¹⁰ As Lockwood (2006) points out, the political economy approach (Strand Two) takes issue with the two key premises of The Decentralization Theorem. First, it does not assume that public agents maximize the welfare of their constituencies, and, second, it drops the assumption that centralized provision implies a uniform level of local public outputs. In place of this, Strand Two models typically embody an explicit structure of legislative decision making and an electoral process from which one can characterize the pattern of local outputs produced by a centralized system.

In the traditional framework, local officials were assumed to select levels of local public outputs that maximize the net benefits for their respective constituencies. To the extent that this involved any spillover benefits to neighboring jurisdictions, this perspective envisioned a set of centrally determined matching grants to localities that would effectively internalize these benefits. In such a setting, fiscal decentralization is clearly welfare enhancing as compared to a centralized outcome characterized by a uniform level of local outputs across all jurisdictions. The traditional solution solves the “coordination problem” (through a system of intergovernmental grants) and provides for what Lockwood (2006) calls “preference matching” (i.e., levels of local outputs that reflect local tastes).

In the Strand Two literature, public agents have access to rent-seeking activities. They are typically subject to the discipline of electoral processes so that if they get too far out of line, they can expect to be voted out of office. Even in a local setting, however, there may be some scope for public agents to pursue

¹⁰ For some important contributions to this literature, see, for example, Lockwood (2002), Besley and Coate (2003), Besley and Case (1995), and Persson and Tabellini (2000). Lockwood (2006) provides an excellent review of this body of work.

their own utility maximization inasmuch as there is imperfect (and asymmetric) information resulting from unobserved “productivity shocks.” In these models, the “centralized outcome” (i.e., a vector of outputs of a local public good across the various jurisdictions) is determined by a central legislature (typically composed of members elected from their respective local districts). This replaces the simple assumption in the traditional perspective of a uniform level of local outputs under centralization. The models in Strand Two then (within a fairly rigorously defined political economy setting) seek to characterize and compare centralized and decentralized outcomes.

There is obviously significant variation across the specific Strand Two models in the kinds of outcomes they generate and the sorts of insights that they provide. But there are some themes. In these models, centralization tends to allow for a greater coordination of fiscal decisions (i.e., the internalization of interjurisdictional externalities), while decentralization may more effectively promote preference matching and increased “accountability” (more limited rent-seeking). As Besley and Coate (2003) put it, “All of this notwithstanding, the key insight remains that heterogeneity and spillovers are correctly at the heart of the debate about the gains from centralization” (p. 2628). The choice between the centralized or decentralized provision of a particular local public good involves a basic tradeoff between the gains from improved coordination under centralization and the greater sensitivity of local outputs to local tastes (and costs) and perhaps increased accountability under decentralization.

The various Strand Two models treat this tradeoff in somewhat different ways. In Seabright (1996), for example, the leverage of a particular local jurisdiction in the central legislature depends on the probability that it is “pivotal” (i.e., the probability that it will prove decisive

in the election). In a variation on this theme, Perrson and Tabellini (2000, Ch. 9.1) describe an equilibrium in a model in which an incumbent engages in rent-seeking only to the extent that the resulting outcome is at least as satisfactory to the electorate as that represented by a challenger.

The rent-seeking behavior of decentralized public agents is likewise circumscribed by a variety of constraints. For instance, voters may assess the performance of their local officials by comparing fiscal outcomes with those in neighboring jurisdictions—so-called “yardstick competition” (Besley and Case, 1995). Alternatively, various forms of tax competition can provide a constraint on rent-seeking activities (Edwards and Keen, 1996). These kinds of constraints on local public decision-makers may increase the accountability of local officials and, in this way, make fiscal decentralization more desirable as compared to centralization.

In this review of the new theory of fiscal federalism, I have drawn a sharp contrast between two different “strands” of work. It is important to recognize, however, that they share certain basic elements. Both strands view public agents as utility-maximizing individuals with their own objective functions. They focus attention on the political and fiscal environments that create the set of incentives and constraints in which these agents operate. Both draw heavily on the modern industrial-organization literature with its new theory of the firm; they apply to multi-level government the rich insights from principal-agent models within settings of asymmetric information, imperfect monitoring, incomplete contracts, and strategic behavior (Cremer, Estache, and Seabright, 1996).

The difference between what I have called the Strand One and Strand Two approaches involve their specific motivation and focus. The Strand One work, it seems to me, is more historically

grounded and has as its point of departure the recognition that fiscal decentralization can have serious destabilizing effects on the public sector as a whole. It has, in a sense, a broader vision of the role of fiscal decentralization in terms of its impact on the interaction between the public and private sectors and its implications for the performance of the economy as a whole. It involves less in the way of formal theory and more in the way of direct observation of fiscal institutions. One virtue of the Strand One work is that it pays direct attention to how existing fiscal institutions have performed in different settings. It has led to some very insightful comparative studies of the functioning of fiscal decentralization in different countries (e.g., Rodden, Eskeland, and Litvack (2003)). For example, as we will explore in greater depth in the next section, it has significantly altered our perspective on the way intergovernmental grants actually work. More generally, it has provided a valuable agenda for fiscal reform.

The Strand Two literature, in contrast, represents a more formal, theoretical treatment of fiscal federalism. It represents what one might call a more conventional evolution of the theory of fiscal federalism in terms of the modern theory of political economy. Its central concern is the application of formal models of fiscal and political institutions to the analysis of fiscal decentralization. The virtue of the Strand Two line of work is that it provides a precisely formulated and rigorous treatment of the sources of welfare gains and losses from fiscal decentralization that allows for utility-maximizing behavior by public agents and does not impose as a precondition uniform levels of local outputs under a centralized regime. On the other hand, there is little attention in this literature (at least so far) to certain important federal fiscal institutions; there

is not much discussion, for example, of intergovernmental grants, which constitute an important element both in the traditional theory of fiscal federalism and in the structure of actual fiscal systems.¹¹ Strand Two research has, however, developed some intriguing insights into fiscal behavior that are themselves the subject of empirical inquiry. The rigorous development of the concept of “yardstick competition,” for example, provides a provocative and potentially rich idea of the way in which fiscal decentralization may promote accountability in local finance (e.g., Brueckner (2003), Allers and Elhorst (2005)). Strand Two is certainly not without its applications to actual fiscal behavior and institutions. In sum, these two Strands of new theory in fiscal federalism share much in terms of their sources and concerns, but I think their orientation is sufficiently different to make the distinction I have drawn in this paper.

ARE INTERGOVERNMENTAL GRANTS A GOOD IDEA?

Intergovernmental grants are ubiquitous. In federal and nonfederal countries alike, central governments typically make use of a wide variety of grant programs to provincial, state, and local governments to support specific programs or simply to transfer funds to be used at the discretion of the recipient. The traditional theory of fiscal federalism provides, as we have discussed, the rationale for such programs along with some guidelines for their form.

Some of the early empirical work on these grants, however, found some disquieting anomalies. In two theoretical papers, Bradford and Oates (1971a, 1971b) laid out a set of equivalence theorems showing that, for a broad range of models of collective choice (including, for example,

¹¹ Even at a purely theoretical level, Strand Two (unlike the traditional theory) has not addressed the potential of such grants for resolving the “coordination problem.”

the median-voter model and the Lindahl model), intergovernmental grants were formally equivalent in all their allocative and distributive effects to a set of grants directly to individuals. Under the median-voter model, for instance, these theorems implied that an unconditional grant to a community was fully equivalent in all its effects to a set of unconditional grants to the individuals in the community, where these grants are proportional to local tax shares. This perspective on intergovernmental grants became known as the "veil hypothesis," the notion that such grants to a local government were simply a "veil" for a set of grants directly to the individuals in the locality.

The veil hypothesis has a testable implication, namely that the effect of such unconditional grants on local government spending should be essentially the same as an equal increment to local private income. In both cases, individual budget constraints simply shift out by the same amount with no change in their slopes. However, a whole host of empirical studies have found that the veil hypothesis does not seem to hold. Instead, these studies indicate that unconditional grants have provided a far greater stimulus to public expenditure than have equal increases in private income. This finding has become enshrined as "the flypaper effect." Although perhaps not too surprising, these results do raise some troubling issues concerning the responsiveness of local public officials to the will of the local electorate. One way of explaining this finding (one of several I might add) is that public officials have their own set of objectives, including perhaps the Niskanen pursuit of budget maximization (Niskanen, 1971). At any rate, the flypaper effect was an early source of some discomfort with the way in which these grants apparently work.

However, as we have seen, Strand One of the new theory of fiscal federalism raises what may be far more serious

concerns about the role of intergovernmental grants. It suggests that they may be an integral part of an intergovernmental fiscal structure that promotes fiscal irresponsibility and macroeconomic instability. This literature contends that intergovernmental grants have been a basic element in establishing soft budget constraints. When seen in the context of a game-theoretic model of intergovernmental budgetary behavior, the new literature indicates that elastic grant programs have provided one of the means by which central governments bail their decentralized counterparts out of financial crisis. In short, intergovernmental grants have created what Rodden et al. (2003) call a setting of "transfer dependency" that undermines the incentives for sound fiscal behavior. This is indeed a serious charge levied against such a pervasive fiscal institution.

But even aside from this issue, some further empirical work indicates a number of additional reasons to be troubled by how grants work in practice. In our discussion of the traditional theory of fiscal federalism, we put forth the basic case for the use of open-end matching grants to encourage the provision of local public outputs with external benefits to other jurisdictions. The matching shares for such grants would presumably reflect the extent of these spillover effects. If a dollar of local public spending on a particular program generates 50 cents of benefits for residents of other jurisdictions, our formula would call for a grant program under which the federal share of spending on this program is one-third (i.e., a grant of 50 cents for each dollar of spending by the local government). But when we actually look at matching grant programs, this is not what we typically find. Inman (1988), for example, in an early study of federal grants in the United States, points out that the federal share in one of the major U.S. federal grant programs, grants for the construction of interstate high-

ways, was (for many years) 90 percent (!). Most federal matching grant programs have very large federal matching shares, far in excess of any conceivable external benefits. Moreover, many of these programs (including the highway programs) involve closed-end matching: the matching grants shut off at a certain point after which no further funds are available. It is straightforward to show that closed-end matching, where the recipient exhausts the available grant funds, provides no more stimulus for the supported program than would an unconditional grant of the same magnitude. Closed-end matching grants, in short, do not do the job for which they are intended. More generally, Inman (1988) found in his study that he could “explain” the pattern and levels of grants far more satisfactorily with a political model of grants than with an analytical framework based on the economic principles of public finance.

As we have discussed, another basic role for intergovernmental grants is that of fiscal equalization involving the transfer of revenues from fiscally strong jurisdictions to those that are fiscally “disadvantaged.” Such grants are widely used in both federal and nonfederal countries. However, some recent work suggests that fiscal equalization too can have some perverse effects. In one recent study, Padovano (2007) contrasts the experience of the U.S. and Italy. The U.S. is a country which has never undertaken any major fiscal equalization programs at the federal level. Italy, in contrast, has long had major programs that transfer funds from the relatively wealthy north to the south. It is Padovano’s contention that such transfers across regions can interfere with the normal processes of income convergence that characterize the process of economic growth. This is just what Padovano finds. In the U.S., one element of long-term eco-

nomie growth has been the convergence of income between the north and the south. The movement of labor to the north and capital to the south has provided a process through which there has been a steady narrowing of income differentials between the two regions. In Italy, in contrast, there has been no such convergence in incomes between north and south. Padovano’s view is that the massive inter-regional transfers in Italy have effectively blunted the incentives for the factor movements that would normally result in income convergence over time.¹² Some other country studies likewise raise concerns about the impact of programs of fiscal equalization. Rodden (2003), for example, finds that in Germany large fiscal equalizing transfers among the German Lander have actually rewarded poor fiscal performance. In addition, supplementary transfers have been used as “explicit bailouts” for some jurisdictions.

All this is certainly enough to make one have second thoughts about the utility of intergovernmental grants (as I suggest in my somewhat facetious title to this section of the paper). But grants are clearly here to stay, and, moreover, some of them at least have a legitimate role to play in a federal fiscal system. The real message, it seems to me, is to attend to the structure and use of these grants so as to make them more effective in achieving their objectives and less subject to perverse manipulation.

The literature has some guidance to offer on all this. First, the role of intergovernmental grants needs to be limited: they must not constitute the overwhelming source of local revenues so as to create an environment of “transfer dependency.” Many economists have made this point time and again, stressing the importance of a basic reliance on own revenues as a source of autonomy and fiscal discipline for decentralized levels of government.

¹² In a similar vein, McKinnon (1997) and McKinnon and Nechyba (1997) have suggested that, in several countries, fiscal equalization has interfered with the standard process of “equalization through competition.”

In particular, local authorities need to rely on their own revenues for financing *at the margin* so that decisions to expand public programs are made in full light of the additional costs. A solid system of local taxation needs to underlie an effective system of intergovernmental grants (Bird and Vaillancourt, 1998).

Second, the system of grants must be transparent and predictable. The formulae and the precise form of the grants must be clear and suitable for their purpose. And there must be a well-defined and understood set of rules that preclude the “gaming” of the system. This may be more easily said than done in a political setting. In fact, what may be needed is some means to limit the discretion of the central government in the distribution of grant funds. At any rate, the design and operation of systems of intergovernmental grants in a political setting is an issue of the first priority in fiscal federalism; we need to devote more attention to it.

LABORATORY FEDERALISM

One of the traditional arguments advanced on behalf of fiscal decentralization is that it encourages development and experimentation with new forms of public policy. In the most famous statement of this contention, Justice Louis Brandeis wrote in 1932 that,

There must be power in the States and the Nation to remould, through experimentation our economic practices and institutions to meet changing social and economic needs It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country (Osborne 1988).

In fact, Brandeis was reiterating a point made sometime earlier by James Bryce (1888), who, in his monumental study of

U.S. government, pointed out that “Federalism enables a people to try experiments which could not be safely tried in a large centralized country” (Vol. I, p. 353).

There are, in fact, numerous instances in which major policy innovations in the U.S. were first introduced by a state or local government—and then later spread into wider use in other states or, in some instances, at the national level. Unemployment insurance, for example, was a state-level policy before the federal government effectively made it mandatory across all the states in the 1930s. Another instance is the taxation of gasoline: Oregon imposed the first tax on gasoline in 1919, long before the first federal gasoline tax was introduced in 1932. In the field of environmental regulation, California implemented the first emissions standards for motor vehicles in 1959, more than a decade before the introduction of national standards.

Interesting as this may be, there is little real theory of laboratory federalism. There is certainly nothing, in principle, to prevent the central government from engaging in limited social and economic experiments without committing the entire nation to a new form of public policy. There have, in fact, been a number of such experiments in the U.S. involving, for example, income-maintenance and housing programs. These experiments provided some valuable results indicating how recipients of income grants or housing vouchers respond to various forms of these programs and to different values of the key parameters. The case for laboratory federalism is thus not fully compelling. However, we might suspect that the range of experimentation taking place in the fifty states would encompass a wider variety of approaches to addressing a social or economic problem than a centrally designed set of experiments.

Susan Rose-Ackerman (1980) and Koleman Strumpf (2002), using quite different approaches, have provided the beginnings

of a theory of laboratory federalism. One important (if unsurprising) result that emerges from their analyses is that the process of decentralized policy innovation encounters a basic “information externality.” A state, for example, that pioneers in the development of a new policy form or instrument provides valuable information for others. In the usual sort of way, this creates a standard kind of incentive for free-riding on the innovative efforts of others. From this perspective, we might expect that a system of laboratory federalism would provide too little in the way of new policy design and experimentation. However, Strumpf shows that it is, in fact, unclear whether a more centralized or decentralized regime will engage in more policy innovation.

The form or working of laboratory federalism can differ in important ways. In some instances, the central government may actually provide a general framework within which states (or localities) can then introduce their own programs.¹³ Alternatively, the initiative for new policies may come entirely at decentralized levels of government. I want here to consider briefly one case of each of these types of policy innovation. A major case of the former approach is the development of a new regulatory instrument: emissions trading or (as it is known more familiarly now) “cap-and-trade” systems. An example of the second approach, an important new fiscal instrument designed and introduced by state governments, is the budget stabilization fund (known more commonly as a “rainy-day fund”).

In our case from regulatory federalism, the impetus to the introduction of emissions-trading systems came at the central government level as a result of a curious kind of compromise over a serious con-

frontation between the EPA and the states over progress under the newly enacted Clean Air Act (CAA).¹⁴ Under the provisions of the CAA of 1970, the EPA established targets for allowable concentrations of certain key air pollutants (known as the “criteria air pollutants”). The states were assigned the responsibility for designing programs (called State Implementation Plans or SIPs) that would reach these targets by 1975, which was later extended to 1977. But by 1976, it became clear that many regions in the U.S. would be unable to attain these target levels of air quality. Moreover, the penalties for non-attainment were severe: the prohibition of *any* new sources of these pollutants or significant expansion of existing sources, which amounted in essence to a ban on further economic growth. As the confrontation of federal environmental officials with governors and mayors loomed on the rapidly approaching horizon, a way out of the dilemma was devised. The 1977 Amendments to the Clean Air Act introduced a new provision that allowed the states to design and implement a system of “emissions offsets” in non-attainment areas. Under the offset provision, new sources of air pollutants (i.e., new polluting firms) could enter a non-attainment area if two conditions were satisfied. First, the new sources were required to adopt the most effective pollution-control technology available. Second (and more interesting), existing sources in the region had to cut back on their emissions by an amount greater than the emissions increment from the new source such that there would be a net reduction in total regional emissions of the relevant air pollutants. New sources could purchase “credits” for certified emissions reductions by existing sources. Soon the offsets policy

¹³ Harrington, Palmer, and Walls (2004) have proposed that the federal government adopt a competitive “policy auction” under which state and local government agencies could submit proposals for policy experiments that, if selected by a review panel, would receive federal funding.

¹⁴ For more detailed discussions of the evolution of emissions trading, see Tietenberg (2006) and Oates (2000).

was expanded to encompass a number of additional provisions (the bubble policy, banking, and netting) and evolved into what became known as the U.S. Emissions Trading Program. But what is important for our purposes here is that the precise form of the program in each instance was left to the individual states. Each state designed its own Emissions Trading Program under the general rubric created within the Amendments to the Clean Air Act. It was the experience with a variety of forms of emissions trading in different states that demonstrated that this was not only a feasible, but quite effective and appealing way to achieve certain types of environmental objectives. The success of the Emissions Trading Program led ultimately to the creation of a national program to address the troubling acid-rain problem. Under the Clean Air Act Amendments of 1990, the U.S. introduced an emissions-trading program (or cap-and-trade system) designed to cut emissions of sulfur oxides in half, from 20 million to 10 million tons. This program has been a widely acclaimed success in terms both of achieving its environmental objective and in doing so in a cost-effective way that has directly encouraged the development of new control technologies. But I seriously doubt that the national sulfur allowance program could ever have come into being without the earlier efforts at state and local levels that demonstrated the feasibility and effectiveness of this policy instrument. This is, thus, a case where the innovative potential of a diverse set of decentralized governments produced a major new policy approach within a framework or over-arching idea introduced at the central-government level. Indeed, the general success of cap-and-trade systems in the

U.S. has now led to their adoption on an international scale. They have become a major policy instrument for tackling global climate change. Under the Kyoto framework, the U.S. experience with emissions trading has served as the basis for a huge new cap-and-trade system in the European Union to reduce carbon emissions to the limits specified in the Kyoto agreements. Likewise, in the U.S., several state and local governments have introduced (and are introducing) their own cap-and-trade systems to regulate emissions of greenhouse gases.¹⁵

My second case addresses a new policy measure, the impetus for which has come from state and local governments themselves. In the 1970s, five state governments introduced a new fiscal institution to cushion state public finances against the shocks produced by cyclical variability in revenues and expenditures. This is not to say that states had entirely ignored the problem of budgetary volatility; many had regularly maintained some kind of general fund surplus during periods of expansion to be drawn upon during recessions. However, the introduction of budget stabilization funds (BSFs) involved the formal legislative creation of a "rainy day fund" with explicit rules for deposit, withdrawals, and replenishment. The general appeal of BSFs soon became apparent, and there was a rush of new adoptions of such funds in the 1980s: twenty-three additional states introduced these measures during this decade. There are now only five states without a BSF.

Some recent empirical work suggests that these rainy day funds have indeed been quite effective budgetary devices for increasing saving and for reducing the vulnerability of state budgets to cyclical

¹⁵ Another intriguing dimension of the cap-and-trade story is the origins and development of the basic idea itself. It is a fascinating example of the power of ideas in the policy arena. Indeed, in the 1960s and early 1970s, the basic concept of a cap-and-trade system was little more than a wild idea in the ivory towers of academe—something that was discussed largely in terms of diagrams on blackboards in the classroom. In Oates (2000), I review the story of how this idea made the journey (in spite of much early opposition from environmental groups and other interests) from academe to its current role as a major regulatory instrument.

variation. Knight and Levinson (1999), for instance, have found that BSFs have increased state–government saving and total balances. In addition, the Wagner and Elder (2005) results indicate that states with formal BSFs have experienced a reduction in expenditure volatility over the cycle, while those without such funds have not. The especially strong fiscal pressures in the first part of the current decade seem to have indicated that these funds may need to be larger; the cumulative deficits of state governments over this period were, in fact, far more than the available reserves in the BSF in most states. This is leading to a reassessment of the appropriate level of a BSF.

What is more interesting from our perspective here is the considerable variation in the structure of BSFs across the states. The legislation creating such a fund typically specifies a set of rules for deposits, withdrawals, the replenishment of the fund, and often a cap on the size of the fund. These rules exhibit wide variation across the states, with some funds exerting much stricter controls over their operation than others. There is much being learned from this variation. To take one example, some of the BSFs have quite onerous replenishment requirements that necessitate the replacing of monies withdrawn from the fund very soon after their use, even if economic conditions have not improved. It is becoming clear that such strict replenishment rules are likely to impair the effectiveness of the fund. They can require the channeling of revenues back into the fund well before the recessionary period is over. This can even provide a disincentive for using the fund when it is needed. Moreover, as noted above, the experience during the current decade is suggesting that a further look needs to be taken at the levels of reserves in these funds. All this is the subject of much ongoing study. It is a nice case of laboratory federalism in which widespread experimentation across the

states is teaching us how to perfect an important new fiscal institution.

SOME CONCLUDING THOUGHTS

In the last 15 years or so, research work in fiscal federalism has developed some new perspectives on the economics of multi-level government. One strand of this work is firmly grounded in actual fiscal experience, some of it directly addressing dramatic fiscal collapses in several countries. More generally, this work has looked carefully at the structure of incentives embodied in existing fiscal institutions and has explored the ways in which these institutions interact with the economy as a whole. This body of work has helped us to see how a strong and healthy system of private markets and an appropriately decentralized public sector with sound fiscal institutions can reinforce one another so as to support an efficient and growing economy (Weingast, 1995). At the same time, it has made us aware of the potential dangers where soft budget constraints can induce serious and destabilizing fiscal behavior.

A second strand of research has followed a somewhat different course. This is a body of more formal theory that seeks to apply the constructs of the new “political economy” to the analysis of multi-level government. Taking as its point of departure the “traditional” (or, as Lockwood (2006) calls it, the “standard”) approach to fiscal federalism, this line of research has recast the basic framework of the problem to encompass both rent-seeking political agents and explicit systems of legislative and electoral behavior; within this setting, the literature then characterizes outcomes under fiscal centralization or decentralization and provides new insights into the conditions that favor one structure over the other. While the form of the analysis has new elements, the nature of the problem remains essentially the same: the issue is one of a tradeoff between

the capacity of a centralized solution to provide “coordination” of local outputs (i.e., internalize spillovers effects) and the ability of a decentralized system to tailor outcomes to the preferences (and to other circumstances including differing cost functions) of the local jurisdiction. Just how this plays out depends, as this literature shows, on the specific form of both fiscal and political institutions.

As I have tried to show, these new perspectives on fiscal federalism raise some intriguing questions concerning the role of some traditional federal fiscal institutions. In particular, Strand One of this work develops a new and disturbing perspective on intergovernmental grants. These systems of grants, although serving legitimate purposes, can, under certain circumstances, be a source of serious fiscal mischief. High on the research agenda in fiscal federalism, it seems to me, is a careful review of intergovernmental grants, both in theory and more especially in practice.

One of the appealing features of a decentralized system (one that has not been the subject of much attention in either of the two new strands of research) is its capacity to foster innovation in fiscal institutions and public policy more generally. So-called “laboratory” or “experimental” federalism has, in fact, been the source of many new approaches to addressing a wide range of fiscal and regulatory issues. In this paper, I have explored briefly the role that U.S. state and local governments have played in the development of cap-and-trade systems for environmental regulation and of budget stabilization funds (rainy-day funds) for reducing the vulnerability of state and local finance to cyclical variability in the economy. These are but two (of many) cases in which decentralized public innovation has enhanced the performance of the public sector through demonstrating the feasibility and effectiveness of specific types of measures.

In conclusion, I want to call attention to another line of work that, although related to laboratory federalism, asks a somewhat different kind of question. Fiscal institutions are not just there; they come into being and develop over time. To understand more fully the workings of the public sector, we must recognize that fiscal institutions are themselves *endogenous* (North, Wallis, and Weingast, 2008). Moreover, since fiscal institutions are themselves a subset of governance institutions, their evolution cannot be adequately described or understood solely within the framework of public finance. Political decision makers understand that fiscal institutions can profoundly affect the future structure of incentives confronting politicians. They sometimes design fiscal institutions to solve political, rather than efficiency, problems. When fiscal solutions have unintended effects, particularly when changes in fiscal institutions at one level of government influence fiscal or political outcomes at another level of government, these changes in one period generate forces making for further changes in later periods. These changes induced by fiscal institutions can reach to the constitutional structure of government itself, including, for example, the allocation of functions and revenue sources between levels of government. The structure and functioning of the U.S. system of fiscal federalism is the result of a long history of evolving fiscal institutions, a process sometimes resulting from specific events that precipitated profound change (like the New Deal) and in other cases the result of more deliberate efforts over time to reform the system. The intriguing and important issue from the perspective of fiscal federalism is how fiscal decentralization influences the evolution of fiscal institutions. Our treatment of laboratory federalism suggests, on the one hand, that it can encourage innovation and change. On the other hand, some observers have

contended that a multi-level system, by expanding the set of checks and balances, may actually endow the system with greater inertia. The issue is, thus, how fiscal decentralization is likely to alter the course of fiscal evolution. Both theory and historical inquiry are needed to address this issue.¹⁶

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¹⁶ Wallis and Weingast (2008), for example, provide an insightful study of this kind that explores the evolution of state debt limitations and the finance of U.S. infrastructure.

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