

***The Institutions of Federalism:
Toward an Analytical Framework***

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Abstract: *Mature federations have relatively transparent delineations of authority among levels of government; subnational governments enjoy considerable autonomy in their expenditure, revenue, and debt policies. In other countries, problems of soft budget constraints, bailouts, and fiscal and financial instability demonstrate the difficulties of institutional design in a federation. This paper outlines an analytical framework within which interjurisdictional spillovers may create incentives for higher-level governments to intervene in the control and financing of lower-level governments (“bailouts”). This framework helps to identify directions for theoretical and empirical research that can illuminate important features of observed institutions and guide policy analysis.*

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I. Introduction: The Institutions of Federalism

Ideally, the fiscal policies of state and local governments, and of subnational governments in countries throughout the world, should enable them to provide highly-valued public goods and services to their residents, financed by revenue systems that impose little waste through deadweight losses and that distribute the burden of government finance in a manner not offensive to widely-shared notions of equity and fairness. It would be a mistake to claim that the US federation, or that of any other country, has “solved” all of these problems of public finance in a federal system.

By more modest standards, however, the US system of fiscal federalism has performed in a reasonably adequate fashion over an extended historical period. Although the balance of responsibilities among the national, state and local governments is continuously shifting, each level of government has assumed an important role in the execution and financing of important public-sector functions. For example, localities and state governments have played leading roles in public education, in law enforcement and public safety, and in transportation. In some areas of policy, such as cash and in-kind income redistribution (AFDC/TANF, Medicaid), subnational governments have been important partners with the national government through complex and always-evolving systems of intergovernmental fiscal transfers and regulation. Whatever their shortcomings, the Federal, state, and local governments have performed these and other important functions sufficiently well for the large and complex US economy to grow and prosper over a long period of time. The same can be said of the federal systems in other developed countries, such as Canada, Australia, and Germany. At some basic level, these institutions have demonstrated their viability: they evidently have survival value, and, at a minimum, they have not posed major impediments to successful economic development. More positively, they may have contributed in major ways to efficient and equitable resource allocation—prosperity, growth and fairness—in some countries.

The experience of other nations throughout the world suggests, however, that finding structures of governance and public finance that are viable, not to say optimal, can be a difficult task. To name only a few notable examples, such important and diverse countries as Russia, India, Brazil, South Africa, and China have been grappling with issues of subnational finance, intergovernmental fiscal relations, and the structure of governance during the past decade, raising difficult and intertwined economic, legal, political, regional, and social issues.¹ In these and many other countries, the restructuring of fiscal systems has been accompanied by far-reaching changes not only in policy but in the fundamental institutions of government, including the rewriting of national constitutions. In India, for instance, local governments known as *panchayats* were given vastly expanded responsibilities in amendments made to the Indian constitution in 1993. There are almost 250,000

¹ This short list could easily be extended, to include most of the world’s developing and transition economies. References to the burgeoning literature on this subject could easily fill many pages; inevitably omitting important contributions, interested readers may consult several edited volumes – Bird et al., (1995), Martinez-Vasquez and Alm (2003), and Rodden et al. (2003) – for a valuable sample of analyses dealing with many individual countries with many references to related literature. Further studies are cited below. Readers may also wish to consult Bahl and Wallich (1992) (China), Bahl (1995) (China and Russia), the World Bank (1995), Buckley and Mini (2000) (Russia), (China), Wildasin (1992) and Ahmad (1997) (South Africa). Fiscal decentralization and the institutional structures of federations are also the topic of debate in a number of advanced economies; for a series of analyses of Scandinavian countries, see Rattso (1998). Garcia-Mila et al. (2002) analyze subnational government borrowing in anticipation of future fiscal transfers, with an application to Spanish data. Seitz (1999) examines bailouts in Germany.

of these governmental units, “making this the single largest experiment in decentralization of government attempted anywhere in the world” (Rajamaran (2003, p. 1). To perform effectively, these units of government must provide appropriate public services, at appropriate levels, with appropriate instruments of finance. Whether this will happen will depend on the assignment and development of expenditure functions and revenue instruments among different levels of government, the structure of regulation and control under which lower-level governments operate and thus the degree of revenue and expenditure autonomy they enjoy, and on the administrative and legal implementation of these fiscal and regulatory policies. The range of choices to be made along all of these dimensions is immense, and part of the task confronting India, like other countries engaged in similar transformations, is to devise and implement an appropriate institutional structure. Just as the institutions of state and local government have been important to the economic performance of countries like the US, so many analysts draw increasing attention to the role of institutions in inhibiting economic development in the poor countries of the world (see, e.g., Easterly (2001)). The issues at stake in understanding the financial and governance structures of federations are profound.

The existing literature of fiscal federalism can shed much light on these important issues. At the same time, it must be acknowledged that much of the academic research on subnational government finance (here interpreted broadly to encompass not only the (own-source) revenue systems of these governments, but the assignment of public-service delivery responsibilities to (and among) them, as well as the many forms of fiscal transfers and regulatory mechanisms which determine the fiscal relations between higher- and lower-level governments) has focused, explicitly or implicitly, on the US and Canadian federations, and has largely taken for granted their institutional underpinnings. This is most apparent in the empirical literature of the subject, which by its nature examines the data and policies of particular jurisdictions. Theoretical analyses are in principle not restricted in application to particular times and places, but applied theoretical research inevitably rests on assumptions, possibly implicit, that may be quite appropriate in some contexts but inappropriate in others. In the US, Canada, and other mature federations, the fundamental status and roles of the subnational governments—the existence and boundaries of the US states or the Canadian provinces, the legal inferiority status of their statutes, regulations and ordinances to the national constitution, the basic definition of the legitimate spheres of tax and expenditure authority for each level of government and the degree of autonomy that they enjoy—has been largely settled. In the US, no serious secession movement has arisen since the 1860s, states and localities generally do not obstruct the application of Federal law within their boundaries, and the state and local taxes in widespread use have been tested in legal disputes and, as a rule, have been found to lie within the legitimate taxing powers granted to them under the US Constitution. Administrative and enforcement structures have evolved to implement the fiscal policies of these governments and to facilitate their coordination.² These and a host of other features of the institutional structures of the mature federations have evolved over long periods of time and, indeed, their evolution is never-ending. But they are relatively stable and they provide a backdrop for the analysis of state and local government finance and of intergovernmental fiscal relations that underpins the literature of the subject, as represented, for example, by Oates’ (1972) classic *Fiscal Federalism* and all modern textbooks on the subject.

² To offer but one illustration: state and local governments frequently implement taxes on individuals and businesses that are based largely upon similar Federal taxes; the enforcement of these subnational taxes is greatly facilitated by the sharing of information among tax authorities at different levels of government.

There is, then, a need to investigate more thoroughly the institutional structure of governance and public finance in federal systems. What are the essential institutions of mature federations? How do they facilitate effective fiscal decentralization, in which subnational governments are able to enjoy substantial expenditure, revenue, and borrowing autonomy while avoiding dysfunctional fiscal policies that would drive them into financial distress? The discussion below is intended to contribute to an analytical perspective that may be useful in understanding why and under what conditions the institutional relationships among governments lead to fiscal and financial crises and under what conditions these outcomes may be avoided.

Section II draws attention to some aspects of the fiscal and financial experiences of federations in the US and elsewhere. This discussion emphasizes that, in some cases, subnational governments (such as those in the US) borrow extensively and are the recipients of large-scale fiscal transfers from higher-level governments and yet appear to operate in an orderly and financially-responsible manner, whereas financial and fiscal policies in other cases may lead to major financial and fiscal crises. Section III presents a simple theoretical model that focuses on externalities as fundamental determinants of the fiscal relations among governments. Sometimes, as in the traditional theory of fiscal federalism, this model suggests that intergovernmental fiscal transfers (in the form of matching grants) can insure efficient provision of externality-producing public goods and services while preserving local autonomy and effective fiscal decentralization. In other instances, however, the model suggests that lower-level governments may have incentives to act in ways contrary to broader social interests and, in so doing, to trigger interventions into local affairs (loss of local autonomy) by higher-level governments. In these instances, fully efficient provision of public services may not be attainable, and upward-reassignment of public-sector functions, i.e., fiscal centralization, is a possible outcome. This theoretical framework thus identifies conditions under which the institutions of fiscal decentralization may be viable and conditions under which they are likely to break down – ultimately, perhaps, to be supplanted by more centralized arrangements.

Section IV some of the possible implications of this analysis for two important related issues: the assignment of expenditure responsibilities to different levels of government in a federation, and the determination of the intergovernmental structure of debt. Section V discusses some further outstanding theoretical and empirical issues that await further analysis. Section V concludes.

II. Local Fiscal Crises: “Curious Incidents” in American Federalism

Numerous authors have recently drawn attention to the potential problems associated with borrowing by subnational governments (e.g., Prud’homme (1995), Tanzi (1996), and Ter-Minasian (1996)). In brief, the basic concern is that these governments may borrow excessively, relying on debt finance where they should be collecting taxes, spending on wasteful projects or on excessive staffing and compensation for government employees, and eventually becoming financially insolvent, creating disruptions in capital markets, and perhaps endangering the stability of the entire financial system. Excessive borrowing by subnational governments may also increase the pressure on central banks to expand credit and the supply of money excessively, thus creating inflationary pressures and threatening overall macroeconomic stability.³

³ This concern is apparent in some of the analyses undertaken by institutions such as the World Bank and the

Like any borrowers, American state or local governments can and sometimes do find themselves unable to make obligatory payments to creditors, vendors, and others. In such situations, they may have recourse to bankruptcy proceedings under Chapter 9 of the Federal bankruptcy law. In practice, however, almost no governments go through bankruptcy proceedings.⁴ This is not to say that subnational governments in the US never experience fiscal distress. New York City, Philadelphia, Washington DC, and Orange County, California have all gone through episodes of threatened if not actual insolvency; at the time of writing, the city of Pittsburgh finds itself in similar circumstances, while the state of California is grappling with massive debt obligations.⁵ Nevertheless, state or local fiscal crises are “curious incidents” in US experience, exceptions to the general rule.⁶ Why is this so? In part, it must be because these governments generally act with “fiscal restraint,” meaning that they pursue policies that do not typically lead to bankruptcy proceedings. In part, it is also because of the actions of superior governments, which, through their own fiscal and regulatory policies, create an environment that induces “appropriate” fiscal policies by inferior governments or that rescues them from “inappropriate” policies prior to bankruptcy. What are the incentives that operate on decisionmakers, both in inferior and superior governments, that induce “fiscal restraint” on the part of the former?

One possibility is that borrowing by states and localities is so limited, perhaps by state constitutions or by regulatory constraints imposed by higher-level governments, as to reduce their financial exposure to inconsequential levels. Indeed, a number of authors (e.g., von Hagen (1991), Poterba (1994), and Bohn and Inman (1996)) have found that such constraints do have a significant impact on subnational fiscal policies. It is noteworthy, however, that these constraints certainly do not prohibit subnational governments from borrowing altogether. On the contrary, subnational governments in the US have borrowed with gusto. For instance, in 2003, the total stock of state and local government debt and other liabilities (even excluding retirement-fund obligations) amounted to approximately \$2.4 trillion (Board of Governors of the Federal Reserve System (2004), table L.105), a figure that may be compared with \$4.9 trillion of publicly-held Federal government debt. Despite this large amount of outstanding debt, subnational governments as a whole are quite creditworthy. Access to capital markets is clearly a central element in subnational government finance in the US, which evidently has established an institutional structure within which

International Monetary Fund. It is easy to understand why creditors should be concerned with the creditworthiness of borrowers, especially in the light of the periodic “debt crises” that have bedeviled the developing nations and their creditors (see Easterly (2001) for an informative discussion of debt cycles in LDCs). There is nonetheless a paradox—an interesting one—when lenders are troubled by borrowers who wish to borrow. After all, one solution to the problem of “excessive” borrowing is for lenders to get out of the lending business. It is instructive to contemplate why this might not be the best and simplest solution to the problem of controlling indebtedness by developing countries, such as the “highly indebted developing countries” that have been the focus of much recent attention.

⁴ Since 1937, when current bankruptcy laws were enacted, there have been only about 500 bankruptcy filings by local governments, a tiny number, given that there almost 100,000 local governments in the US. See Administrative Office of the U.S. Courts (2000a, b, Table F-2)) and National Bankruptcy Review Commission (1997) for further discussion and data.

⁵ During the Washington DC fiscal crisis of the 1990s, the GAO (1995) undertook a series of case studies of major US cities that had gone into some form of receivership. See Holloway (1996a, 1996b) for some summaries of the findings. For the current Pittsburgh experience, see Strauss (2003).

⁶ In the story “Silver Blaze,” Sherlock Holmes famously draws attention to the “curious incident” of the dog in the night. The Inspector observes that the dog did nothing in the night, to which Holmes remarks, “That was the curious incident.”

subnational governments enjoy the benefits of such access without endangering their own solvency, much less the overall financial stability of the US economy.⁷

If the US experience illustrates how subnational governments can have access to capital markets while avoiding financial catastrophes, the experience of some other countries provides reason for caution. In Argentina and Brazil, hard-won progress in a long battle against high inflation and monetary instability appears to have been jeopardized by state and provincial government borrowing. State-government participation in the financial sector, especially through ownership of major commercial banks, facilitated the issuance of state debt to large banks whose default would potentially disrupt the entire financial system, creating strong pressures on central-government fiscal and monetary authorities to absorb and monetize subnational-government debt.⁸ In China, fiscal imbalances have arisen as a consequence of rapid economic reforms (a loosening of central-government planning constraints and reduced reliance on state-owned enterprises to finance and deliver public services) together with poorly-developed revenue systems for local and provincial governments and, in some instances, pressing public-expenditure demands associated with rapid economic development and large demographic shifts. Under these circumstances, subnational governments may face incentives that lead to excessive (and often implicit) borrowing (Qian and Weingast (1996) and Jin and Zou (2003)). In India, central-state fiscal relations, including complex systems of intergovernmental grants and concessionary lending, have been the targets of recent reform efforts. It appears that state-government indebtedness has grown as explicit and implicit central-government transfers to state governments have been constrained (McCarten (2003)), suggesting that borrowing by subnational governments may not be readily controllable.

The term “soft budget constraint” is often used to refer to phenomena of this type. In each of the cases just mentioned, it appears that the fiscal policies pursued by subnational governments may create financial risks, first for themselves, and, secondarily, for higher-level governments that may end up having to “bail them out.” The subnational governments may have weak incentives to

⁷Constitutional and other constraints on subnational governments in the US have clearly not resulted in a low level of borrowing, which suggests that they operate in much more subtle fashion than, say, a simple blanket prohibition on borrowing. Indeed, such a prohibition might simply encourage these governments to expand the use of alternative debt-like financing mechanisms. For instance, a city can hire workers at low wages, promising generous retirement benefits. If it does not adequately fund these obligations, it shifts the burden of current service provision to future taxpayers (see, e.g., Epple and Schipper (1981), Inman (1981)) – a financial outcome that could be achieved more transparently through explicit borrowing. Similar mechanisms for intertemporal reallocation of fiscal burdens and benefits include deferral of capital expenditures for infrastructure maintenance (keeping police cars in serviceable condition, trimming trees so that electrical power is not disrupted by falling limbs during bad weather) or entering into back-loaded long-term contracts with vendors. Whatever financial risks may be associated with explicit local borrowing, there are similar risks associated with such implicit borrowing. Regulatory constraints that limit the former but not the latter may reduce the transparency of local borrowing but not necessarily its amount; they may also result in higher effective borrowing costs (on balance, it might be less costly to issue debt and keep the trees trimmed or the potholes repaired than to allow infrastructure to deteriorate). The magnitude of implicit state and local government obligations in the US is difficult to estimate but must be dwarfed by the trillions of dollars worth of unfunded liabilities of the Federal government (especially social security obligations). See Kotlikoff (1992) and Auerbach et al. (1999) for more discussion of these issues.

⁸ See Dillinger and Webb (1999), Webb (2003), and Rodden (2003). Salegh and Tommasi (1998) focus on transactions costs as a major factor in institutional performance in Argentina which, as detailed by Hart (1995), may be contrasted with incomplete contracts; the analytical approach sketched below is perhaps better characterized in terms of the latter rather than the former.

conduct their fiscal policies in such a way as to minimize the risk of bailouts. A decentralized system of government that gives rise to disorderly finances for lower-level governments, imposes financial risks on the rest of the society, triggers excessive indebtedness for the entire nation, and may even threaten monetary stability is hardly conducive to efficient provision of public services, to equitable fiscal policies, and to economic development. Why do some countries seem to face problems with soft budget constraints for subnational governments whereas, in the US experience, such difficulties seem to be quite rare?

There is surely no simple answer to this question, since the circumstances of different countries vary so widely. Furthermore, the serious study of the problem of soft budget constraints presents an immediate difficulty: how can we even define “soft budget constraints” or “bailouts” in a meaningful sense? Explicit intergovernmental fiscal transfers are a longstanding and important feature of the US federal system; the same is true of other federations, such as Canada, Germany, Brazil, and India. In the US case, explicit Federal government grants to state and local governments in 2002 amounted to about \$351 billion, about 3.4% of GDP and about 17.5% of total Federal expenditures (OMB (2004b), Table 12.1). If intergovernmental fiscal transfers alone constitute “bailouts,” then the US federation has been ridden with bailouts for decades. Furthermore, in addition to explicit intergovernmental transfers, national governments sometimes make significant *implicit* transfers to lower-level governments. In the US case, the deductibility of significant amounts of state and local taxes under the Federal income tax provides one form of implicit transfer, while the income-tax exemption of interest on state and local government debt is another; the OMB (2004a, Table 18-1) tax expenditure estimates for these two items for 2003 are about \$25.5 billion and \$49.6 billion, respectively. Even the income-tax deductibility of mortgage interest expense and other Federal policies that stimulate investment in residential housing have the effect of increasing the size of the real property tax base on which many local governments depend, and may thus indirectly support subnational government finances.

Do these high levels of explicit and implicit fiscal transfers to lower-level governments mean that subnational governments in the US face soft budget constraints after all? State and local governments would assuredly face significant fiscal distress if these transfers were unexpectedly eliminated. They might attempt to make up for the revenue shortfall by borrowing. State and local government borrowing was about \$46 billion in 2002 while their total expenditures were about \$1,040 billion; Federal government borrowing in that year was about \$317 billion. Viewed from a completely static perspective, the cancellation of Federal grants to subnational governments would have turned the Federal accounts from deficit to surplus and would have drastically increased the deficits of the latter, perhaps to the point of unsustainability. In this sense, current Federal transfers shelter subnational governments from the consequences of otherwise unsustainable fiscal policies. If the intergovernmental transfers found in the US fiscal system do not constitute bailouts, how, precisely, can “bailouts” be defined?

The mere existence of intergovernmental transfers does not seem to capture the intuitive notion of “bailouts,” which should somehow reflect “irregular” or “extranormal” transfers, perhaps “necessitated” by “imminent” financial insolvency of lower-level governments. Even this definition seems to miss the crucial element of perverse incentives implied by “soft” budget constraints, however. Subnational governments can experience fiscal imbalances or crises stemming from a wide array of causes. Losses from natural disasters such as earthquakes, floods,

droughts, or hurricanes can affect both the demand for public expenditures—to rebuild damaged infrastructure, for instance—and, through disruption of economic activity and destruction of valuable resources, the revenue capacity of affected jurisdictions. Extraordinary transfers from a national government to a subnational jurisdiction that has suffered from some natural catastrophe might better be characterized as the execution of an implicit social insurance contract than a bailout that reflects poor fiscal choices by a lower-level government anticipating a bailout. (See Bucovetsky (1997), Bordignon et al. 2001), and references therein for discussion of intergovernmental transfers as a form of insurance; the latter especially emphasizes the importance of informational asymmetries for optimal policy.) The same could be said of extraordinary fiscal transfers arising from man-made catastrophes such as the terrorist attacks of September, 2001 (Wildasin (2002).)

Although these remarks are highly informal, they suggest that a “soft” budget constraint must somehow reflect a departure from “normal” fiscal relations that is the consequence, at least in part, of the exercise of discretion on the part of lower-level governments; there is at least a strong presumption that such behavior is a response to implicit incentives offered by a higher-level government and that the decisions made by lower-level governments facing soft budget constraints are in some way “socially harmful.” These ideas require some formalization, especially if they are to be operationalized for empirical research and meaningful guidance in the formulation of policy.

III. Hard and Soft Budget Constraints: An Analytical Framework

To put these ideas into sharper analytical focus, let us consider the classic “textbook” spillover situation in which one locality provides a public service to its residents that may produce external benefits for others in society. The externality or benefit-spillover framework is a natural one for the analysis of bailouts or, more generally, of interventions by higher-level governments in the fiscal affairs of subordinate governments; such interventions are difficult to explain if the decisions of the latter are not important, in some way, to the rest of the society whose interests are represented by the higher-level government.⁹

To avoid inessential complications, assume for now that all individuals in the locality have identical preferences and incomes, and that the locality is able to finance its expenditures using an ideal local lump-sum tax. If x denotes the amount of private consumption of a typical local resident, I that household’s income, and z the amount of spending on the local public service, the budget constraint AB in Figure 1 depicts the menu of choices available to the locality’s residents if they act in isolation from a higher-level government: the resources I available to the locality can be spent entirely on private goods (point A), or, through the use of local taxes, in part or in total (point B) on local public services. With convex local preferences, some point on this constraint would be most preferred from the viewpoint of local residents; at this point, local residents’ marginal rate of substitution between private consumption and the local public good, MRS^l_{xz} , would be equal to 1.

⁹ A similar model is developed somewhat more formally in Wildasin (1997). The analysis here generalizes some of the key ideas of that paper. Readers should also consult Inman (2003) for an insightful and wide-ranging discussion of US experience that emphasizes the roles of financial markets, the issues of credibility and reputation building, and other considerations that complement the present discussion.

If the local public service benefits only local residents, this outcome is efficient. If the local public service produces spillover benefits, however, local decisionmaking will produce an inefficient outcome.

FIGURE 1 ABOUT HERE

Matching grants provided by a higher-level government (denoted by a superscript c , for “central”) are the classic remedy for the inefficiencies associated with benefit spillovers. These grants must of course be financed with taxes collected by the higher-level government. Assuming that the higher-level government is also able to collect revenue in a lump-sum fashion, with the amount of such tax denoted by T^c , the effect of a matching-grant policy is represented by a shift of the local community budget constraint like that shown as CD in Figure 1. The total resources available to local residents are reduced to $I - T^c$ because of taxes collected at the higher level, and the relative price of local public services is reduced to $(1 - m)$ where m (the “matching rate”) denotes the fraction of local expenditures financed by the higher-level government. If the matching rate is chosen correctly, it will induce the locality to choose a level of local spending that reflects the benefits of local public services to the entire society, including not only local residents but those who reside outside of the locality. Letting $MRSC_{xz}^c$ denote *non-residents’* marginal rate of substitution between private consumption and the locality’s public services, i.e., the marginal valuation that non-residents place on these services, an efficient level of local services z^* occurs where $MRS_{xz}^l + MRSC_{xz}^c = 1$. An optimal matching rate $m = MRSC_{xz}^c$, as depicted in Figure 1, can induce (or support) socially-optimal local public service provision by internalizing the spillover benefit. Note that the optimal matching rate reflects the magnitude of the spillover benefits at *the margin*; the matching rate is small if these spillovers are small at the margin, even if *inframarginal* units of public services produce large spillovers.

To show the situation facing (representative) nonresident households, let point F in Figure 1 represent the income that would be available for them to consume if no matching grant were available to the locality. The line FG , which has a slope of $-m$, illustrates that a matching grant to the given locality imposes a burden on the rest of society in the form of taxes paid to the higher-level government to finance this grant. When the locality provides z^* units of public services, nonresidents enjoy the external benefit derived from these services but also must sacrifice some private good consumption, as shown by the point H , because of the taxes that they pay to the higher-level government. As shown by the indifference curve U^c in Figure 1, nonresidents are on balance better off at this point than would be the case at point F , where $z = 0$.

In this analysis, matching grants serve as Pigovian corrective subsidies. Implicitly, the higher-level government acts as a sort of Stackelberg leader, “announcing” a matching grant policy to which local governments react, taking that policy as parametrically given. This leader-follower analysis is plausible in an environment where there are many local governments and a policy framework established by the higher-level government that applies to all localities—a formula-driven state-level program of funding support for many scores of local school districts might be a good illustration. The analysis fails to allow for the possibility, however, that the menu of choices implied by the center’s matching-grant policy—the budget constraint CD —may nevertheless not be “credible” in the sense that the center would not necessarily wish to act solely in accordance with

that policy under all circumstances. In particular, suppose that the locality, instead of choosing the efficient level of public services z^* , reduces its local taxes and spending—for example, to 0. Such a choice seems irrational since the consumption bundle at C is less-preferred, from the viewpoint of local residents, than (x^*, z^*) . As noted above, however, it is also less-preferred from the viewpoint of non-residents: underprovision of an externality-producing public service harms the interests of outsiders. By way of illustration, the case of $z = 0$ might represent a situation where police vehicles no longer function, harming public safety not only for local residents but for tourists or commuters, or where insufficient maintenance of local water-treatment facilities endangers not only the quality of local water supplies but of public infrastructure shared with other jurisdictions and the quality of water consumed by nonresidents who draw water from the same source.¹⁰

Although the underprovision of local public services may harm local residents, it may also induce a response by the higher-level government to insure at least a minimal level of public-service provision, if for no other reason than to protect the interest of non-residents. If the higher-level government provides the local public good directly, bearing its full cost, the consumption of nonresidents will lie on the budget line FG' , with a slope of -1. Alternatively and, in terms of the diagram, equivalently, the higher-level government may assume control of some local-government functions and inject sufficient funds into the financing of these functions for the local government to pay for whatever level of public service the higher authorities desire. From the viewpoint of nonresidents, the most-preferred outcome on this line lies at H' , corresponding to a level z' of local public service provision. This level of provision is not socially-efficient, and it may represent a lower level of public services than local residents would prefer, not only under the matching-grant program but possibly even in the absence of such a program. Nevertheless, local residents may still prefer this outcome to the socially-efficient allocation (x^*, z^*) – not because they enjoy a lower level of local public services, but because they can free-ride on the expenditures made by the higher-level government, under which they still enjoy z' of public services at zero local cost. Given that local spending has dropped to zero, at least for this particular public service, local residents will be able to consume C units of private consumption; with the higher-level government providing z' units of the local public service, the final consumption of local residents occurs at point E' . As drawn in Figure 1, this point lies above the local residents' indifference curve u^l through point E . The local residents would, in this case, be well-served by local policymakers who drive the level of the externality-producing public service toward 0, inducing increased assistance from the higher-level government. This is advantageous to local residents even if they sacrifice “control” over local public service provision, i.e., even if the level of public services drops to a level that meets the desires of non-residents, with no reference to local benefits. Such a situation might be called a “bailout:” higher-level authorities have taken responsibility for the provision and financing of local public services in order to bring them up to levels that satisfy the demands of external constituencies. In order to insure that resources are truly spent on the externality-producing local services, the higher-level government would need to impose controls on local

¹⁰ During the Washington DC fiscal crisis of the early 1990s, local press reports indicated that homicide detectives were reduced to using city bus transportation for lack of automobiles in the police department, that the Capitol police were offering used tires from their cruisers to DC police, and that a major water treatment facility on the Potomac River, the cost of which was supposed to be shared by the District and the States of Virginia and Maryland, was malfunctioning and had suffered damage because the District had not adhered to its commitments to maintain the facility.

autonomy; specifically, it would need to insure that the funds that it provides are used only for the provision of the public services that produce the external benefits and not converted to private good consumption or its equivalent.

This simple analysis suggests reasons why “bailouts” might *sometimes* occur, and, equally importantly, reasons why they would not *always* occur. Consider, for instance, the indifference curves U^c and $U^{c'}$ representing the preferences of nonresidents. As they are drawn, nonresidents place a relatively small value on the local public service when it is provided at the socially-efficient level z^* , as reflected in a relatively flat indifference curve at point H , but this value rises sharply as the level of the local public service drops to z' . This means that nonresidents are prepared to pay a lot to insure a “minimum” level of provision of the public service. For example, because of concerns about epidemic or simply out of altruism, nonresidents might place a high value on the availability of safe drinking water in a locality. By contrast, the availability of sufficient local water supply and treatment capacity to support industrial activity, golf courses, or car washes – a higher level of z -- might be of minor concern to nonresidents. In such cases, the higher-level government cannot credibly refrain from providing at least some minimal level of local services because they are too highly valued by nonresidents. Of course, even in this situation, the level of support offered by the higher-level authorities might be extremely modest—corresponding, in Figure 1, to the case where the point H' , and the corresponding “bailout” level of public service provision z' , lie much further to the left. With a sufficiently small value of z' , the point E' could lie below the local indifference curve U^l , which means that local residents would prefer to provide the socially-efficient level of public services z^* rather than induce intervention by higher-level authorities. To summarize this part of the analysis: because local government public services produce external benefits, as reflected in the preferences of nonresidents, the higher-level government may be unable to commit not to intervene if there is a “breakdown” in the provision of “essential” local public services. However, even if such a commitment is not credible, it may not be advantageous to local residents to induce a bailout because they value the opportunity to augment the level of local public services above the “minimum” level that the higher-level government, acting in the interest of nonresidents, would be willing to provide.

As we have just seen, the preferences of nonresidents play an important role in determining whether local actions could possibly trigger intervention by higher-level authorities, and if so, what happens to local public services (i.e., determine z') in the event of an external intervention. Whether such an intervention is *desirable* from the viewpoint of local residents, on the other hand, depends critically on *local* preferences. In Figure 1, the critical question is, as we have seen, whether the point E' lies above or below the indifference curve U^l , and it is obvious that this cannot be determined a priori. If the indifference curve U^l exhibits very limited substitutability between x and z -- in the extreme case, if these goods are perfectly complementary so that the indifference curve is L-shaped with a corner at E -- then the point E' will necessarily lie below the indifference curve through E . This corresponds to a public service over which local residents would strenuously seek to maintain local control. As an example, the residents of a state or locality might conceivably have very strong preferences for control over curriculum or textbook choice in their childrens' schools, and would be unwilling to relinquish this even if higher-level authorities would pay for much or all of the rest of local school costs. If, on the other hand, local preferences between the public service and other goods exhibit high substitutability—i.e., if the indifference curve U^l is very flat—then the point E' , the outcome for local residents in the event of a bailout, is likely to be preferred to the socially-efficient outcome at E . This would correspond to a case where “control”

over the level of the public service is not very important to local residents, in the sense that they can easily substitute other goods in exchange for the public service. When a reduction in the level of the public service to a level like z' is not very harmful to local residents, they have an incentive to cut local expenditures on the activity, saving local resources for higher-priority uses and deferring to the preferences of nonresidents, as represented by the actions of a higher-level government.

It is easy to experiment with the preference configurations in Figure 1 to see under what conditions local governments would underprovide a local public service in order to attract support from outside—the “bailout” case—and under what conditions localities would instead adhere to (or, perhaps better, willingly participate in) whatever programs of transfers higher-level governments might offer to them. As one important special case, a local activity might generate no spillover benefits at all; in this case, the indifference curve U^c becomes a horizontal line and the optimal matching rate is zero. In this case, there is no externality to internalize, no need for a matching grant, and no possibility that a higher-level government would intervene to maintain provision of the public service if the locality failed to do so; the local budget constraint in this case is definitely “hard,” there is no possibility of a bailout, and the equilibrium outcome of decentralized decisionmaking is efficient. As another polar case, it is possible that some local service provides no benefit at all to local residents but that it does benefit nonresidents. In this case, the local indifference curve U^l is a horizontal line, and local residents will never choose to provide a positive level of the public service. In this case, the socially-efficient amount of the public service would be z' , the amount that nonresidents would prefer when they bear the entire cost of the service. Provision of the public service by a higher-level government is certain in this case, and this outcome will be socially-efficient, as well. In intermediate cases, where residents and nonresidents both benefit from the public service, efficient outcomes are possible, as for instance under a scheme of ideal matching grants, but they are not always sustainable. If the configuration of local and nonresident preferences is such that bailouts do not occur and the local budget constraint is “hard,” then a socially-efficient outcome can be attained through an optimal matching grant. If resident and nonresident preferences are such that local residents are better off with a bailout, then they will exploit the soft budget constraint to their advantage. The final outcome in this case is not fully socially efficient since local policies are set in accordance with the preferences of nonresidents.

This simple and deliberately stylized model can immediately be extended in several ways. First, in order to illustrate the analysis diagrammatically, it has assumed that there is only one local public good, which may leave the impression that bailouts are likely to be observed when local public expenditure levels are low. However, there are in practice many types of local public services and local public expenditures, not all of which produce significant external benefits. The foregoing analysis suggests that higher-level authorities might intervene with a bailout even if local public expenditures were very high, if these expenditures were devoted to “inessential” local public services – i.e., public services that do not produce significant externalities. In the simple diagram of Figure 1, “private consumption” x should be interpreted to include all uses of local resources other than those that produce significant externalities for nonresidents, including some categories of local public expenditures.

By assuming that all households within a locality have identical preferences and incomes, as do all nonresidents, the analysis focuses on the interplay of the interests of those inside and those outside the locality. Relaxation of these simplifying assumptions would provide a significant role for local and non-local politics within the model, perhaps leading to important new insights. The

fundamental tensions between resident and non-resident interests, highlighted in the most transparent fashion in the simple model above, are not likely to disappear in such a model, but their effects will be tempered by other factors.

As a closely-related remark, it should be noted that corruption and bad governance may sometimes undermine local institutions and trigger interventions by higher-level governments. Suppose, for instance, that corrupt officials divert local fiscal resources for private use, perhaps by channeling high levels of local public expenditures into payments to political supporters. Such diversions would depress the level of provision of “essential” local public services (z in Figure 1). Whether any given use of local fiscal resources is considered corrupt depends on the particularities of the case, but, for the purposes of interpretation of the model, the crucial question is whether the locality is using its resources to insure “sufficiently high” levels of provision of externality-producing public services. In this context, the tension between external demands and the interests of local officials is nicely captured in the following quotation describing Washington, DC mayor Barry’s response to Congressional intervention in the District’s affairs: “Mayor Marion Barry ... opposed the efforts of a member of Congress to provide \$42 million to the D.C. police department. He said it would be unfair to single out the police department for additional funds when all city agencies are in financial straits.” (*Washington Post*, Mar. 30, 1996, p. A8, col. 6).

Finally, the simple model developed in Figure 1 abstracts from dynamic considerations, collapsing many events, which may occur over a rather protracted period, into a single event. For example, the fiscal crises of state governments in Brazil developed over a considerable period, during which state indebtedness accumulated, the solvency of state banks was gradually put at risk, and these debts were then absorbed by higher-level authorities. The model above focuses on the consequences of the “obvious” solution to the insolvency of state governments: they could simply be allowed to declare bankruptcy and left to sort out their fiscal problems on their own, a solution that would require a restructuring of local public expenditures and taxes so as to achieve fiscal balance, likely at the cost of significant interruptions of public service delivery (including public disorder and economic disruption arising from threatened layoffs and pay cuts for public-sector employees). This adjustment could be spread over time through refusal to meet outstanding debt obligations, presumably resulting in limited or more costly future access to credit markets and thus to less-favorable fiscal options in future periods. These consequences, which could be somewhat long-lasting, would be costly for the rest of the society – the spillover effect of local public service provision – and thus a higher-level government cannot allow them to play out. The model illustrated in Figure 1 in effect reduces this complex process to a simple choice on the part of lower-level and higher-level governments. The former must decide whether to pursue a course of action leading to the breakdown of “essential” public services and the latter must decide whether such a breakdown is sufficiently costly to the rest of society to warrant a sufficient infusion of fiscal resources to stave it off. The model thus highlights the critical role of the nature of local public services – their importance to local residents and to nonresidents – in determining whether local budget constraints are “soft” or “hard.”

Such a simple model can, at best, shed light on structural determinants of fiscal behavior and intergovernmental relations. In practice, bailouts of lower-level governments, like business bankruptcies, are triggered by immediate precipitating events – a business cycle downturn, for instance. A model that attempts to explain the precise timing of bailouts, not to mention other intrinsically dynamic phenomena such as reputation building by higher- or lower-level

governments, must contain more intertemporal structure than shown in Figure 1.

IV. Functional Assignment and the Intergovernmental Structure of Public Borrowing

This section explores some of the possible implications suggested by the foregoing analysis for understanding institutional arrangements in a federation and for borrowing by subnational governments. It focuses on two issues: first, the assignment of responsibility for the provision of public services among levels of government, and second, the division of borrowing authority among levels of government. Both issues raise questions of institutional structure. From a positive perspective, we may ask how existing arrangements come to be as they are and what their effects may be; from a normative perspective, we may seek to understand the benefits and costs of alternative arrangements in order to improve institutional structures. As will be apparent, there are important open research questions in each of these areas. It should be possible to extend previous research in public finance, industrial organization, and monetary economics to make useful progress on them.

A. The Assignment of Expenditure Functions

The analysis in the preceding section suggests that when nonresidents are concerned about some local policy (there are externalities), when residents do not place a high value on local control over the policy (they are not harmed too much when the policy is set according to external rather than local preferences), and when nonresidents are prepared to pay to maintain significant amounts of a public service in the absence of local provision, local actions are likely to trigger interventions by a higher-level government in which the resources of higher-level authorities are used to achieve local outcomes that serve the interests of non-residents.

Empirically, it appears that these interventions take one of several forms, corresponding to different institutional arrangements. One possibility is that a higher-level government may step in to take temporary control of local fiscal policies. Normally, special administrative bodies (“financial control commissions” or the like) are established in such situations (GAO (1995)) in order to wrest control of local government away from incumbents. These bodies may undertake audits, renegotiate contracts, set budgetary priorities, institute new management systems, and exercise other extraordinary powers so as to restore order and solvency to local finances, to insure that external funds are directed to the provision of “essential” public services, and to meet debt obligations—possibly at the expense of cuts in the (“over-”) staffing of some local programs or in the (“excessive”) compensation of local public-sector employees, or to stop the diversion of local fiscal resources to private uses through embezzlement, theft, crony public contracting, or the like. Such an outcome is not unlike the reorganization of a bankrupt firm, where a court assumes extraordinary powers on a temporary basis to resolve a firm’s financial problems, to be followed either by liquidation of the firm or its reorganization. Liquidation is not a feasible option for some local governments, however.¹¹ The question then arises as to whether a “reorganized” local

¹¹ It is certainly possible to dissolve some local governmental units, like transportation, hospital, water, or power authorities. In the case of county or municipal governments, however, the question is not whether to have a local

government can be fiscally and financially viable. In some cases, where apparently remediable local conditions (corruption, bad management systems, unduly generous local public employee contracts) seem to lie at the root of the locality's fiscal problems, administrative and fiscal reforms may suffice to reestablish the locality as a functioning independent entity.

In other cases, however, more fundamental changes may be necessary. For example, suppose (as has been frequently suggested in the US context) that central cities are subject to persistent fiscal stress because they must provide public services for nonresident commuters and shoppers who are not subject to taxation by the cities within which they spend substantial periods of time. A one-time administrative reform of city finances does not address such structural problems. In such cases, exemplified by the externality relationship displayed in Figure 1, a more basic institutional change may be needed. One possibility is that some combination of fiscal transfers and regulations (matching grants, for instance) may provide a workable framework within which the interests of nonresidents can be accommodated in the setting of local policies. Like the matching grants shown in Figure 1, such policies need not interfere with the expenditure and revenue autonomy of local governments. Fiscal transfers of this type, like the massive and persistent fiscal transfers from the Federal to state and local governments documented in Section II, do not constitute "bailouts" in the sense that they become part of the established institutional structure of intergovernmental fiscal relations and do not signal local fiscal or financial crises. Rather, such transfers could be viewed as the institutional embodiment of a Coasian solution to a spillover phenomenon (Coase (1960)), that is, a contract between local residents and nonresidents in which the latter provide inducements for the former to choose policies that take spillover effects into account. These contracts would not necessarily take the form of simple matching grants like those shown in Figure 1. Indeed, the breakdown of local public service provision illustrated there could be avoided by sufficiently complex (nonlinear) fiscal transfers between the higher- and lower-level government authorities.¹²

In practice, the informational requirements of such arrangements can impose inordinate informational costs. For example, the costs associated with highly individualized fiscal transfer arrangements between state governments and the tens of thousands of local governments found in the US, including not only the costs of gathering information but of insuring transparency and lack of manipulation or abuse by local or state authorities, could easily become prohibitive. For these reasons, we might expect to see special and more complex administrative and fiscal arrangements for a comparative handful of large jurisdictions (e.g., for "cities of the first class," a common population-based designation used in state government statutes and regulations pertaining to local governments, a class that often contains only one or a few of the major cities within a state) while relatively simple regulatory and financing mechanisms are utilized in dealing with smaller and more numerous localities.¹³ However, as suggested in Figure 1, the comparatively simple arrangements for intergovernmental transfers that are feasible in practice may not be sustainable, in the sense that they do not produce incentives for local policymaking that forestalls interventions by

authority at all, but rather what form it will take.

¹² A combination of matching and lump-sum grants can be viewed as two-part contracts; in Figure 1, such contracts would affect both the intercepts and the slopes of the budget lines resident and nonresident households. More complex grant programs could produce piecewise linear or possibly highly nonlinear constraints.

¹³ The analysis of Ades and Glaeser (1995) suggests that major cities may effectively capture rents from the rest of society by virtue of their special status; the establishment of special fiscal treatment for such cities is one mechanism through which this could occur.

higher-level authorities. In such cases, the theoretical analysis predicts sustained control and financing of public service provision by a higher-level government.

This outcome amounts to an institutional arrangement that Oates (1972) would characterize as “economically centralized” provision of the public service, whether the provision and financing of the service is executed directly by the higher-level authority (“political centralization”) or whether the higher-level authority simply removes effective fiscal autonomy from the local government (“economic centralization with political decentralization”).¹⁴ As suggested by Oates’ “decentralization theorem,” such centralization of decisionmaking comes at a cost. In Figure 1, this is the cost associated with provision of the level z' of the public good, a socially-inefficient outcome that reflects the interests of nonresidents but that is not responsive to local preferences.

The problem of “expenditure assignment” in a federal system has customarily been approached from a normative perspective. Some authors have discussed the “mapping” of jurisdictional boundaries onto the service areas associated with different public services, suggesting that localities should be assigned the function of performing those tasks for which the benefits accrue exclusively or at least predominantly to local residents, and that activities with benefits that are dispersed over wider geographical areas should be assigned to higher-level governments. Since these mappings are inevitably imperfect, some spillover effects are likely to remain for almost any services that might be left in the hands of lower-level governments. To obviate this problem, public service provision could always be reassigned upward, but then there would be no role left for local governments to perform. And, as Oates’ (1972) “decentralization theorem” emphasizes, upward reassignment implies lack of local control in the setting of public service levels in accordance with local preferences. Ideal intergovernmental transfers provide a possible normative solution to the problem of “public sector organization,” that is, to finding an assignment of expenditure responsibilities among governments that achieves socially-efficient outcomes.

It should be apparent that there is a strong parallel between these normative principles and the foregoing discussion of soft budget constraints. When spillovers are modest and where local control of services is particularly valuable, functions assigned to local governments are likely to be performed relatively efficiently. Programs of corrective subsidies may provide a mechanism through which the interests of the rest of the society can be represented meaningfully to local residents. However, just as imperfections in contracting can play an important role in explaining the observed organization of firms and the institutions under which they are financed and governed, so imperfections in intergovernmental fiscal relations may play an important role in explaining why less-than-perfect assignments of expenditure functions among governments may ultimately emerge in a federal system.¹⁵ Financial and fiscal crises may be reflections of “disequilibrium” assignments of responsibilities among governments, requiring institutional restructuring in order to

¹⁴ While economic and political centralization are logically independent, the transactions costs that arise when higher-level governments attempt to control and finance the public services of lower-level governments suggest that the two will often coincide in practice. In the spirit of Coase (1937), shifting a public-sector activity entirely into the hands of a higher-level government may be the least-cost institutional structure through which to implement a centralized policy.

¹⁵ As these remarks suggest, there may be many important parallels between the problems of “industrial organization” and the problems of “public sector organization” that arise in a federal system, suggesting many useful issues for further analysis. For example, the analysis in Figure 1 bears some resemblance to Proposition 2 in Hart (1995). See Hart (1995) and Tirole (1999) for very stimulating discussions of the foundations of contract theory and many references to related literature.

arrive at sustainable arrangements, just as bankruptcies of private firms often trigger their reorganization.

B. The Structure of Public Debt in a Federation

Concerns about public-sector indebtedness are ever-present. History is littered with examples of governments that have borrowed excessively, leading to financial crises, hyperinflations, and civil unrest. These examples testify to the potential costs associated with government borrowing. The potential benefits of government borrowing are also substantial. In particular, government borrowing permits the smoothing of taxes over time, as emphasized by Barro (1979). As is true of any policies that reduce the efficiency costs of taxation, optimization of the intertemporal tax structure not only reduces the deadweight losses from taxation, it also lowers the marginal cost of public funds. If governments waste resources, this is a drawback associated with more efficient tax structures (Brennan and Buchanan (1980)); if government redistributive activity is constrained by tax distortions (Meltzer and Richard (1981)), it permits more redistribution, for good or for ill; and, last but not least, if governments spend resources on projects that benefit the governed, it permits welfare-improving public expenditures to take place. All of these considerations potentially come into play when analyzing the debt policies of subnational governments. However, it is not immediately clear how or whether to treat the debt policies of subnational governments in relation to those of higher-level authorities, although this is a clearly a matter of vital importance in grappling with issues of soft budget constraints and bailouts.

Recall the discussion in Section II where it was observed that the Federal government transfers large amounts of resources, explicitly and implicitly, to subnational governments. As an alternative fiscal policy, suppose that the Federal government were to cease all such transfers, thus reducing this component of its expenditures, while maintaining other expenditures as well as its taxes at the current levels. The Federal deficit would then fall by an amount equal to the magnitude of fiscal transfers to subnational governments. Suppose that subnational governments, faced with this reduction in Federal transfers, were to increase their borrowing by an equal amount, keeping their own expenditures and taxes fixed. The net effect of this combination of policies would be to shift government borrowing from the Federal to the subnational level, leaving unchanged not only the total amount of government borrowing, but also the levels of taxes and public services at each level of government. In other words, a change in intergovernmental transfers can be perfectly offset by a change in the *structure* of government debt, that is, a change in the amounts of borrowing undertaken at different levels of government. By the same token, subnational government borrowing could be completely eliminated while being fully offset by an increase in Federal transfers and by an increase in Federal government borrowing. Intergovernmental transfers, in other words, affect the structure of government debt, and conversely, at least in this simple accounting sense. To put it somewhat differently, the structure of debt and the structure of intergovernmental fiscal relations are, in some respects, two sides of the same coin.

Many theoretical and empirical investigations have drawn attention to the importance of political economy and institutional structures in determining the extent to which governments depend on debt to finance their operations. Issues such as intergenerational redistribution, the reputation and credibility of policymakers, the institutional organization of political decisionmaking (e.g. the roles of executive and legislative authorities), central bank independence, international capital mobility and exchange rate policies, and the role of international policy coordination have all been examined

at length. (See Drazen (2000) and Persson and Tabellini (2000) for thorough discussions of these topics and for many references to the literature. Obstfeld and Rogoff (1996) focus on the international dimensions of fiscal and monetary policy.) In this vast literature, however, the intergovernmental structure of public-sector debt seems to have received comparatively scant attention. Yet, as is evident from the data presented in Section II, subnational governments account for a very substantial share of public-sector debt in the US even while they are the recipients of very substantial transfers from the Federal government. Parallel observations apply equally in the context of state/local intergovernmental fiscal transfers and state/local government borrowing. And the literature on bailouts and subnational government borrowing focuses directly on the connection between the structure of debt and intergovernmental transfers. There are numerous open questions that deserve further analysis in this context: What determines how much borrowing is or should be undertaken at each level of government? If the national government is able to borrow, does it really matter whether subnational governments are also able to borrow? Would it be possible simply to “delegate” borrowing responsibilities to the national government and to manage any gap between state expenditures and taxation through intergovernmental transfers, or does effective fiscal decentralization require some “debt autonomy” for lower-level governments along with revenue and expenditure autonomy?

If intergovernmental transfers work costlessly, and if the real costs of borrowing by higher- and lower-level governments are the same, the intergovernmental structure of government borrowing is a matter of indifference. In the spirit of the Modigliani-Miller theorem, equivalent outcomes could be achieved if the borrowing of either higher- or lower-level governments were arbitrarily constrained. More generally, however, one level of government or the other may have a comparative advantage in borrowing. For example, transactions costs associated with borrowing could make it advantageous for subnational governments not to borrow at all, and for their “borrowing requirements” to be met entirely by a higher-level government which, in effect, bundles together the loans of many lower-level governments into a single debt operation, disbursing the proceeds of its borrowing to the latter in the form of intergovernmental transfers. This is one way to view some of the large explicit and implicit transfers made by the Federal government in the US to the states and localities: the debt-ridden Federal government is acting in part as a financial intermediary on behalf of the latter.

Evidently, however, subnational governments still rely heavily on direct access to capital markets. This may reflect the imperfections of feasible mechanisms of intergovernmental transfers. Like intergovernmental transfers, borrowing allows localities to overcome liquidity constraints and thus to undertake investment expenditures, to smooth short-run revenue fluctuations, or to manage cash flow efficiently. Access to capital markets, like access to any market, is potentially valuable to market participants. The value of this access to state and local governments arises in part from the fact that intergovernmental transfers do not meet these needs equally well. To this author’s knowledge, there are no analyses of subnational government finance that have attempted to determine the welfare losses that would result from a prohibition on borrowing by these governments, but in view of the large magnitude of that borrowing, one may presume that it serves a useful economic purpose and that its prohibition would impose a substantial social cost. This cost is not merely the cost associated with lack of intertemporal tax-smoothing or with inadequate access to funds for investment; it is also the cost associated with imperfect intergovernmental transfers which can and, to some degree, do serve as an alternative to subnational government borrowing. What, then, are the costs associated with such transfers? Presumably, they relate to the costs of gathering information about the credit requirements of subnational governments. Private

financial institutions may have incentives to be more efficient than central governments in determining the creditworthiness of subnational borrowers. The latter have incentives to be creditworthy if the cost to local residents of losing control over local public services is high, that is, if expenditure functions are assigned among governments in such a way that their budget constraints are “hard.”

V. Avenues for Further Research

The preceding remarks have touched on a very wide array of issues, including intergovernmental fiscal relations, debt policy, and the assignment of functions in a federal system. They have already raised many more questions than they answer. This section offers some further tentative suggestions for future research, including especially empirical research, pulling together some of the themes from earlier sections.

A. What are “*bailouts*” and “*soft budget constraints*”?

As noted earlier, there have been numerous case studies of bailouts and soft budget constraints in other countries. Not all intergovernmental transfers are “bailouts,” however, and the operational definition of a bailout is quite subtle. From an empirical viewpoint, how can one distinguish bailouts from other types of intergovernmental transfers?¹⁶

One potentially fruitful avenue of investigation is to explore the dynamics of fiscal adjustment. Subnational governments experience fiscal imbalances or crises stemming from a wide array of causes. Losses from natural disasters such as earthquakes, floods, or hurricanes affect the demand for public expenditures—to rebuild damaged infrastructure, for instance. Through disruption of economic activity and destruction of valuable resources, such events also affect the flow of revenue from taxation and other sources. Less dramatically, business-cycle fluctuations, demographic shifts, and many other events influence both the expenditure and revenue sides of subnational government finances. How do these governments adjust to such events?

When a government experiences a fiscal shock, does it take steps to raise added revenues, to cut expenditures, or to increase borrowing? The dynamics of fiscal adjustment at the national level have been investigated using time-series methods by such authors as Bohn (1991). In the case of subnational governments, assistance from higher-level governments provides an additional margin of potential adjustment to fiscal shocks. Do higher-level governments step in with additional financing for subnational governments? Empirical analysis can help to discover what adjustment paths subnational governments follow and thus, perhaps, to shed some light on whether and to what extent they face “soft” budget constraints. Examples of research along these lines include Buettner and Wildasin (2003), who find, for instance, that large US municipalities follow rather different adjustment paths than smaller ones, with the former relying more heavily on assistance from higher-level governments than the latter. The precise mechanics through which such adjustments

¹⁶ Pettersson-Lidbom and Dahlberg and (2003) have addressed this question in the Swedish context, concluding that local governments there received 1,697 bailouts between 1974 and 1992.

occur, how they may be influenced by different institutional factors (regulations on borrowing, intergovernmental fiscal arrangements, governance rules, the mobility of residents or capital (see, e.g., Bruce (1995)), and thus, ultimately, how institutions embody incentives and influence behavior are all issues that require further empirical investigation.

B. Organization and Finance

Although the preceding discussion has focused on issues of public finance and public policy, there are very analogous issues that arise in the private-sector context. Firms, for example, borrow money and sometimes go bankrupt. In the process of delivering final goods and services, there are often many firms linked through a structure of transactions (upstream/downstream firms), and somehow specific tasks are assigned to specific firms. Sometimes, firms merge or split apart. What is the most efficient way to assign tasks to firms? Should all tasks be assigned to one large firm? These questions have been the subject of intensive study in the literature of finance and industrial organization. The study of federal systems of government and the financial arrangements through which they are implemented—public sector organization and public finance—may profitably borrow from the study of industrial organization and private finance.

Much of this literature, which traces its roots to fundamental work on property rights and transactions costs (e.g., Coase (1937, 1960)), revolves around the way that different organizational structures and financial arrangements affect incentives. The relationship between “ownership” and “control” is central to the theory of the firm (see Hart (1995)). It is not completely obvious how one can define “ownership” and “control” for subnational governments. Are there “residual claimants” who suffer the consequences of local financial distress, or who reap the benefits of favorable local financial outcomes? These could be some or all of the following: (a) local residents, who suffer from cuts in local public services or who bear the burden of additional taxes in case of fiscal imbalances, (b) the owners of land or other immobile resources, assets whose prices are determined in part by local fiscal conditions, (c) local public-sector employees, who suffer layoffs or reductions in compensation when finances are stressed, or (d) taxpayers outside the locality, who indirectly absorb local financial losses when a higher-level government steps in to provide financial assistance in the form of bailouts. Theoretical considerations point toward (b) rather than (a) or (c), at least in the “long run,” as do empirical studies of capitalization of local fiscal policies into property values. Local residents are not perfectly mobile in the “short run,” however, and local public-sector employees may not immediately find equally-attractive employment elsewhere in the event of layoffs or reductions in compensation. To the extent that local residents or public-sector workers are less than fully mobile (see Wildasin (2003) for related analysis), they enjoy quasi-rents that may be eroded or enhanced depending on the vicissitudes of the local public finances, and, in present-value terms, these “short run” changes in (quasi-)rents may determine which agents bear most of the impact of changes in local fiscal policies.

Existing institutions somehow transmit local fiscal shocks to economic agents, through the adjustment of local revenue, expenditure, borrowing, and contracting policies as well as through intergovernmental fiscal transfers. The workings of this transmission mechanism are certainly not clear a priori. Understanding it better is a key issue for empirical research, since the incentives of different agents to influence the local political process, and thus observed policies themselves, are determined by the degree to which local policies affect their welfare. How, empirically, do

observed institutions distribute the “ownership” of local fiscal policies? Do they effectively align “control” with “ownership” and thus create incentives for orderly financing of government?

VI. Conclusion

The evolution of the institutions of American federalism begins with the founding of the republic and the original constitutional design. The experimentation of states and local governments, and their reactions to changing economic, demographic, and other conditions have led to gradual changes in the expenditure and revenue systems of governments at all levels. In the spirit of Hayek (1945) and Nelson and Winter (1982), it is natural to view this evolution not (or not solely) as the result of efforts by informed individuals seeking to shape policy and institutions, but rather as the result of a complex interplay of decentralized decisionmakers—the courts, financial and other markets, and government policymakers—who cannot possibly possess full knowledge of the consequences of their decisions. The system that has evolved in this fashion has at least passed a basic survival test; more than this, as noted at the outset, it has helped to provide the framework within which the US has experienced a prolonged period of economic growth. The same can be said of mature federations in other advanced economies.

Because the institutions of federalism in mature federations function relatively effectively, are relatively stable, and have developed over long historical periods, it can be difficult to discern their workings. In attempting to shed light on the sustainability of different institutional structures, the preceding discussion has focused on fundamental linkages between lower-level jurisdictions and the societies in which they are located, characterized here as spillover benefits associated with local policies. Fiscal decentralization entails local fiscal autonomy in at least some dimensions, and, in the US, state and local governments enjoy and utilize substantial power in all dimensions of fiscal policymaking: public expenditures, taxes, and borrowing. But local policies affect the broader society, giving rise to an extensive (and ever-changing) system of intergovernmental fiscal transfers and regulations. In the mature federations, responsibilities have somehow been apportioned among levels of government in such a way that lower-level governments are free to exercise a high degree of fiscal autonomy without acting in ways that fundamentally upset the entire fiscal and financial system. The experience of countries that are newly embarked on the path of increased fiscal decentralization shows that workable fiscal and financial structures in a federation are by no means a foregone conclusion, and a better understanding of the roles of institutional arrangements in federal systems would be of immense value to policymakers attempting to find their way to an effective structure of public-sector institutions.

The literature of federalism, concerned as it is with the organization of the public sector, may be able to borrow from and adapt analytical approaches that have been developed in the literature of industrial organization and finance. From a macroeconomic perspective, remarkably little attention has been devoted to the development of an integrated framework for the analysis of government debt policy and intergovernmental fiscal relations. As noted earlier, the financial performance of subnational governments and the structure of intergovernmental fiscal relations are themselves no small matter for overall financial and fiscal performance of economies like that of the US. In short, the analysis of the institutions of federalism points to deep and fascinating questions, both theoretical and empirical in nature, that lie at the intersection of several major branches of economic analysis: public finance, industrial organization, financial economics, and macro and monetary economics.

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