

## ABSTRACT

### LOCAL FISCAL DISCIPLINE IN U.S. FEDERALISM

#### APPENDIX: Building a Reputation for Fiscal Discipline

by

Robert P. Inman

Miller-Sherrerd Professor of Finance and Economics

Wharton School, University of Pennsylvania

Philadelphia, PA 19104

Of central importance to the economic performance of all economies, whether democratic or dictatorial, is ensuring fiscal discipline by the public sector. Not only is it essential that government live within the economy's intertemporal budget constraint, but within any fiscal period, government must recognize the social marginal costs of its tax and spending decisions. The institutions of government will have significant effects on these fiscal choices. Fiscal decentralization with the assignment of tax, spending, and borrowing powers to local governments is one institutional reform which may compound the search for public sector fiscal discipline. The recent fiscal crisis in Brazil precipitated by excessive local government borrowing is one important recent example of fiscal mismanagement within a federalist fiscal system. This paper outlines two prominent sources of "soft" budgeting in a decentralized fiscal system: intergovernmental aid and local borrowing. Governmental institutions necessary to constrain inefficient government spending through these two channels are outlined. Historical and contemporary examples are offered as evidence in favor of the proposed institutions.

October, 2000

[This paper is preliminary and circulated for discussion purposes only.]

LOCAL FISCAL DISCIPLINE IN U.S. FEDERALISM

by

Robert P. Inman  
Wharton School  
University of Pennsylvania  
Philadelphia, PA 19104

With over 40 percent of national income allocated through the public sector in most countries of the world, it is imperative that we understand the process by which governments make their budgetary choices. Of central importance is the decision by governments to respect the fiscal discipline imposed by its budget constraint. Using what is popularly known as a fiscal "Ponzi scheme," governments can borrow money today to increase current period consumption of public and (through tax relief) private goods, borrow again to re-finance that debt and maybe even additional consumption, and then discover at a future time that national income is insufficient, or some future government unwilling, to repay the borrowed principal and interest. The country is bankrupt, with potentially devastating economic consequences for the burdened future generations. This lack of fiscal discipline, called government's "soft" budget constraint, threatens the economic futures of socialist (Kornai, 1986) and democratic societies (Auerbach, Kotlikoff, and Leibfritz, 1999) alike.<sup>1</sup>

The move towards fiscal decentralization among the world's public economies and the fear that these new local governments will yield to the temptations of fiscal gamesmanship has led public finance scholars and practitioners alike to search for counter-strategies to ensure local fiscal discipline. The recent fiscal crisis in Brazil largely precipitated by excessive local government borrowing is the most prominent case in point; see Dillinger and Webb (1998). This paper reviews the experience with local and state government fiscal restraint in the United States. For the most part these governments have

---

<sup>1</sup> Nor are the problems of the soft budget constraint limited to governments. Private firms are susceptible too; see Dewatripont and Maskin (1995) for general theoretical analysis and Bolton and Schaftstein (1999) for a review of the evidence.

shown fiscal discipline, but there are notable exceptions: the systematic default of state government debts in the 1840's and the 1870's, of local government debts in the 1930's, and the more recent defaults or near-defaults in New York City (1975), Cleveland (1978), Philadelphia (1990), Bridgeport (1991), Orange County CA (1994), Miami (1996), and Washington, D.C. (1997). How has the U.S. fiscal system responded to these violations of fiscal discipline and what general lessons might be learned from the U.S. experience?

If we hope to generalize from the U.S. experience it is important to first have a framework through which to interpret the U.S. evidence; section II provides that framework. The analysis takes a general view of fiscal discipline, considering not only violations of the intertemporal budget constraint through excessive borrowing but violations of a government's current budget constraint through tax exporting and cost shifting. Each fiscal strategy "softens" the local government's budget constraint and leads to economically inefficient public sector resource allocations. It is important to design the institutions of fiscal policy-making to control the incentives of subnational governments to circumvent their budget constraints. Section II outlines possible institutional structures to improve local and state government fiscal discipline.

Section III reviews the historical and current U.S. experience of local and state government budgeting, focusing particularly on the successes and failures of the U.S. fiscal institutions for controlling fiscal excesses. The analysis identifies politically powerful Presidents, constitutionally based balanced budget rules, many competitive local governments, limited bailouts, an informed capital market, and strong fiscal oversight boards as valuable U.S. institutions encouraging local fiscal discipline. In contrast, weak national political parties, politically decided tax assignments, and an impotent municipal bankruptcy code are seen as contributing to, or at least not discouraging, poor subnational fiscal control in the United States. Section IV summarizes the U.S. lessons for other federalist public economies.

## **II. Ensuring Fiscal Discipline for Subnational Governments**

Efficient resource allocations by governments require that all benefits and all costs of the public action be fully internalized -- "accounted for" -- by public officials when making their policy choices. The failure to account for all social benefits of a public action will typically mean that too little of that activity is provided. Conversely, the failure to account for all social costs will mean that too much of the chosen service or regulation is provided. Often called benefit or cost spillovers, these failures can be significant for subnational governments in economies with mobile residents, workers, and capital.<sup>2</sup> In some cases, these policy failures are an unavoidable consequence of using subnational governments; for example, children educated in one community will provide benefits to other communities when they grow up and relocate. In these instances there are central government policies -- typically, grants-in-aid -- which can induce local and provincial governments to provide the efficient level of the affected service; see Inman (1999). Our concern here, however, is when the local or provincial government actively create spillovers for citizens outside their jurisdictions, typically by shifting the costs of their own expenditures onto non-residents, current or future. In this case there will be a failure by the subnational government to account for all the social costs of its actions and a resulting inefficient overprovision of local services or regulations. Further, non-residents will be asked to bear the shifted costs. If they pay, the result may be an unfair distribution fiscal burdens. If non-residents refuse to pay, the result may be a fiscal crisis. For both reasons of economic efficiency and economic fairness, ensuring fiscal discipline by controlling the ability of subnational government to shift the costs of their fiscal choices becomes important.

Cost shifting by subnational governments can occur in either of three ways. *First*, the subnational government may choose to use a tax whose burden falls primarily on non-residents. Called "tax-exporting," examples include the taxation of natural resources via severance taxes, the taxation of fixed capital assets owned by non-residents via special property tax assessments, and the taxation of hotel rooms and restaurants at tourist destinations; see Inman and Rubinfeld (1996). *Second*, individual

---

<sup>2</sup> On benefit spillovers from the provision of public services by subnational governments, see Pauly (1970). On cost spillovers from the use of local taxes, see Wildasin (1989). On benefit and cost spillovers from local government regulation, see Inman and Rubinfeld (1997).

subnational governments may use nationally funded grants-in-aid to shift the costs of local activities onto the national tax base. This form of cost shifting, often called "pork-barrel spending," includes federal construction of locally beneficial infrastructure or federally funded grants-in-aid for locally beneficial services; see DelRossi and Inman (1999) and Inman (1988). *Third*, subnational governments may borrow money for current period expenditures thereby shifting costs on to future taxpayers, or in the case of default, onto lenders. Called deficit-shifting, examples include debt rollovers, public employee pension underfundings, and insufficient infrastructure maintenance; see Inman (1982; 1983). In each instance, current taxpayers living within the subnational government are subsidized in their purchase of current public services while economic inefficiencies, inequities, or fiscal crises are borne by current and future citizens in the country as a whole.

How can such cost shifting be controlled? To fashion workable remedies to ensure subnational fiscal discipline, we must first understand how such cost-shifting affects local government decision-making and then, if inefficient or unfair, design fiscal institutions and incentives to discourage their use. Figure 1 illustrates the essential inefficiencies which arise with each cost-shifting strategy for the simple case of a subnational government with identical residents.<sup>3</sup> The MB curve measures the marginal benefits to a typical resident from another unit of the local public service consumed in the current period. The MC curve measures the social marginal costs of producing each unit of the local service in the current period. Efficient subnational allocations occur at point  $X_e$  where  $MB = MC$ . Successful cost-shifting breaks this equality by introducing a subsidy of  $\bar{\alpha} \cdot MC$  between social marginal costs,  $MC$ , and the marginal costs actually paid by local residents,  $(1 - \bar{\alpha}) \cdot MC$ ; see Figure 1. With tax-exporting,  $\bar{\alpha}$  equals the fraction of social costs paid by non-residents. With pork-barrel spending,  $\bar{\alpha}$  equals the fraction of social costs paid by the national government. And with deficit shifting,  $\bar{\alpha}$  equals the fraction of current social costs paid by creditors or future taxpayers. In each case, the local residents find it

---

<sup>3</sup> The analysis generalizes to local or provincial governments with different individuals, but with the added complication that cost-shifting can now occur within, as well as between, the subnational units; see Inman (1999).

optimal to increase local spending until MB equals only local marginal costs --  $MB = (1 - \ddot{\alpha}) \cdot MC$  at point  $X_i$ . While point  $X_e$  is socially efficient and provides a net social benefit of area [A] in Figure 1 (= Total Social Benefits - Total Social Costs = area [A + B + E] - area [B + E]), point  $X_i$  is socially inefficient and provides a net social benefit of area [A - D] (= Total Social Benefits - Total Social Costs = area [A + B + C + E + F] - area [B + C + D + E + F]).<sup>4</sup> Area [D] in Figure 1 measures the extent of economic inefficiency associated with the failure of local governments to exercise socially desired fiscal discipline in the face of the  $\ddot{\alpha}$  subsidy.

To control the inefficiencies from local cost-shifting, and any associated fiscal inequities or fiscal crises as well,  $\ddot{\alpha}$  must be driven to 0. Superficially at least, it is easy to imagine strategies which might achieve this end. For example, to control tax-exporting, subnational governments could be limited to resident-only taxes. To control pork-barrel spending for local services, national expenditures for local governments could be limited to only those services with demonstrable economic spillovers. And to control deficit shifting, local borrowing could be constrained to capital outlays only. Each of these regulations, however, must be approved and then enforced. Once we recognize that the same citizens who enjoy the benefits of local cost-shifting are likely to have a role to play when setting and enforcing fiscal regulations, it is no longer obvious that these preferred strategies for fiscal discipline will emerge. Ensuring local fiscal discipline must be done with an understanding of the full political economy of local finance, not just with knowledge of how local governments alone behave.

EXHIBIT I provides such an analysis for the broader political economy of tax exporting or pork barrel spending. The EXHIBIT describes the original decision to engage in tax exporting or pork barrel spending as a prisoners' dilemma game in which all local governments acting on their own adopt the inefficient strategy of cost-shifting, when in fact all local governments, acting in concert, would prefer the

---

<sup>4</sup> Note, however, that point  $X_i$  is still "privately" efficient, giving local residents a net benefit of area [A + B + C] = (Local Benefits - Local Costs), where Local Benefits = area [A + B + C + E + F] and where Local Costs = area [E + F]. Local Costs are defined as Social Costs - Shifted Costs = area [B + C + D + E + F] - area [B + C + D].

no cost-shifting, fiscal discipline outcome. In terms of Figure I all subnational governments would prefer allocation  $X_e$  to the allocation  $X_i$ , provided all other local governments also adopted the efficient outcome.<sup>5</sup> The issue is to have local governments as a group vote for, and to then enforce, regulations which will ensure the  $X_e$  allocation. To control cost-shifting by tax exporting, for example, a commitment to a constitutional tax assignment requiring residency-based local taxation (e.g., resident-only property or income taxation or user fees) enforced by a politically independent court or regulatory agency will be needed.<sup>6</sup> To control cost-shifting by pork barrel spending, local and provincial governments should be assigned expenditure responsibilities for only those services with low inter-jurisdictional spillovers; any request for national support for local spending should then require clear evidence of significant external benefits or costs from local activities. Fiscal institutions to reveal the benefits and costs are necessary. Strong political parties which manage local and national allocations is one alternative; see Wittman (1989). So too is a strong president; see Fitts and Inman (1992). A third alternative is the regulatory option using a court or monitoring agency committed to a constitutionally or statutorily articulated principle of fiscal discipline and positioned outside the reach of legislative intervention; see Weingast (1995) generally and Inman and Rubinfeld (1997; Section VI) in particular.

EXHIBIT II presents the underlying economic structure of the decision by subnational governments to pursue a deficit-shifting/fiscal bailout strategy for local budgeting. The strategy emerges as part of a sequential game played over time between subnational governments and the central government. In the current period, the state or local government chooses to adopt either a debt-shifting strategy ( $\tilde{A}$  in EXHIBIT II) or the status quo balanced budget strategy (Status Quo in EXHIBIT II).

<sup>5</sup> From EXHIBIT 1 the cost-shifting game will be a prisoners' dilemma game if:  $\mathcal{D}_{\acute{o}\grave{a}} > \mathcal{D}_{\grave{a}\acute{a}} > \mathcal{D}_{\acute{o}\acute{o}} > \mathcal{D}_{\grave{a}\acute{o}}$ . This is in fact the case for the cost-shifting game described in Figure 1, where:  $\mathcal{D}_{\acute{o}\grave{a}} = \text{area } [A + B + C] > \mathcal{D}_{\grave{a}\acute{a}} = \text{area } [A] > \mathcal{D}_{\acute{o}\acute{o}} = \text{area } [A - D] > \mathcal{D}_{\grave{a}\acute{o}} = \text{area } [A - D - B - C]$ .

<sup>6</sup> If the tax assignment strategy fails, then policies to ensure mobile capital and labor and to allow the easy entry of new governments to compete away any fiscal rents captured through tax-exporting by current "monopoly" local governments are possible second-best policies; see Wilson (1999). Such a strategy is second-best because competitive local governments cannot control fiscal exploitation and the resulting inefficiencies which arise from the taxation of locational rents; see Boadway and Flatters (1982).

The debt-shifting strategy entails the use of an unfunded deficit,  $\hat{A}$ , which current local government taxpayers will not repay. If the local government adopts the status quo balanced budget strategy in the current period, then the central government adopts a status quo "hands off" strategy in the future period, providing the citizens of the local government and the citizens of the national government with status quo payoff of  $Q^l$  and  $Q^c$  respectively. If the local government adopts the debt-shifting strategy,  $\hat{A}$ , then the central government must choose either to bailout the local government in the future period and repay the local debt (strategy  $\hat{a}$ ) or to insist on no bailout (strategy  $\varphi$ ) and to allow the unfunded local deficit to be defaulted.<sup>7</sup>

What decisions are made by the local and central governments and the final fiscal performance of the local public sector turns on the benefits and costs associated with each outcome of this sequential deficit-shifting/bailout game. The analysis here is for the typical local government described by Figure 1, where now the area  $[B + C + D]$  is interpreted as the unfunded deficit. If the central government bears a significant cost from allowing the local government to default on its unfunded debt and this cost is larger than the cost to the central government of assuming the local debt ( $C_\varphi^c > C_{\hat{a}}^c$ : EXHIBIT II: CONDITION 1), then the central government will prefer the bailout strategy,  $\hat{a}$ . In Figure 1, the present value cost to the central government of a local deficit of area  $[B + C + D]$  will be area  $[B + C + D]$ . Thus the bailout strategy will be preferred if  $C_\varphi^c > C_{\hat{a}}^c = \text{area } [B + C + D]$ ; I specify the likely determinants of  $C_\varphi^c$  below. For the moment assume EXHIBIT II: CONDITION 1 holds. Knowing that they will be bailed out by the central government and thus debt-shifting will be successful, local governments will prefer the unfunded deficit strategy,  $\hat{A}$ , to a status quo balanced budget strategy when the net benefits from deficit financing with bailout exceed the benefits from the balanced budget status

---

<sup>7</sup> Implicit in this specification of the deficit-shifting/fiscal bailout game is that there is no further play after the local government has chosen debt ( $\hat{A}$ ) and the national government has chosen not to bailout the local government ( $\varphi$ ). In particular, bondholders are not then allowed to enter federal or state court to sue the state for payment of its debts. This is in fact the law in the United States, since the passage of the XIth Amendment prohibiting U.S. citizens or foreigners from suing a state for repayment of state debt.

quo ( $B^l - C_a^l > Q^l$ : EXHIBIT II: CONDITION 2a). For the local budget specification in Figure 1, this is in fact the case.<sup>8</sup> Finally, if a central government bailout is preferred, and knowing this, local governments adopt the deficit-shifting strategy, then the bailout game produces an inefficient social outcome if aggregate social welfare is lower under deficits and bailout than if all local governments had adopted the status quo balanced budget/no bailout strategy ( $[B^c - C_a^c] + [B^l - C_a^l] < Q^c + Q^l$ : EXHIBIT II: CONDITION 3). Again, we can show this is the case for the typical cost-shifting specification of Figure 1.<sup>9</sup> Like the tax exporting and pork-barrel spending games, the deficit-shifting game yields the inefficient local budget of  $X_l$  as an equilibrium; area [D] in Figure 1 is a measure of the resulting economic inefficiency.

The key assumption above, and the one which forces the inefficient equilibrium to the deficit-shifting game, is the assumption that the central government bears significant costs ( $C_\varphi^c$ ) if it allows the local government to default on its unfunded deficit. If, on the contrary,  $C_\varphi^c < C_a^c$ , the central government would choose the no bailout strategy,  $\varphi$ , even if the local government adopts the deficit strategy,  $\ddot{A}$ . Knowing this, the local government will then choose the status quo, if  $B^l - C_\varphi^l < Q^l$  (EXHIBIT II: CONDITION 2b). For the fiscal specification in Figure 1, Condition 2b holds.<sup>10</sup> In this case, the efficient status quo balanced budget allocation of  $X_e$  is now preferred, and net social benefits now equal area [A] rather than area [A - D].

Thus if the costs to the central government of not bailing out a defaulting local government,  $C_\varphi^c$ ,

---

<sup>8</sup> Net benefits  $B^l - C_a^l$  to the citizens of the local government from the debt-shifting strategy will area [A + B + C] (see fn. 4 above). (I ignore the fact that these local net benefits are reduced slightly by the local government's own tax share of the national bailout:  $(1/N)[B + C + D]$ .) The net benefits from the status quo balanced budget strategy is only area [A]. Thus  $B^l - C_a^l = \text{area [A + B + C]} > Q^l = \text{area [A]}$ , and CONDITION 2a of EXHIBIT II holds.

<sup>9</sup> In Figure 1,  $B^c \equiv 0$ ,  $C_a^c = \text{area [B + C + D]}$ ,  $[B^l - C_a^l] = \text{area [A + B + C]}$ ,  $Q^c \equiv 0$ , and  $Q^l = \text{area [A]}$ . Upon substitution,  $\text{area [A - D]} < \text{area [A]}$  as required by EXHIBIT II, Condition 3.

<sup>10</sup> If no bailout occurs, then the minimum present value cost that would be required of the local government is to repay the local debt and cover the full costs of the initial  $X_l$  allocation chosen based on the  $\ddot{A}$  strategy; see Figure 1. Such an outcome would provide the local government with a net benefit of  $\text{area [A + B + C + E + F]} - \text{area [B + C + D + E + F]} = \text{area [A - D]}$  which is less than the status quo allocation of area [A]; thus  $B^l - C_\varphi^l < Q^l$  holds.

are small enough, then the deficit-shifting game can be avoided. There are two broad category of costs to the central government from adopting the no bailout alternative. The first, called the financial costs of no bailout, include the added interests costs and penalties or the opportunity costs associated with being credit-rationed (Jaffee and Russell, 1976) which the central government and its coalition members now face from allowing default. These financial costs arise either because of a "reputational spillover" from the defaulting local governments plus any lost economic output resulting from a "financial spillover" onto the rest of the national economy caused by a local default. First, reputational spillovers arise when the credit markets see the central government's unwillingness to assume responsibility for local debts as a signal to disavow responsibility for its own debts as well. Such spillovers are likely to be significant when there statutory or constitutional covenants linking local borrowing to a central government responsibility to repay, or when there are significant and well understood political linkages between local and national constituencies. In these instances, the political decision to default on local debt becomes a valid test case for a decision to default on national debt. Second, financial spillovers occur when the local debt assumes a large position in the portfolios of important national investors, with the local default leading these national investors to fail, causing in turn a national credit crisis and lost economic output as investment and employment decline. When financial costs are large, either because of reputational or financial spillovers from a local default, the national government will find the bailout strategy attractive.

The distributional costs of no bailout are measured by what the central government feels it loses by having those other than it's national taxpayers cover the cost of shifting local debt. Someone must eventually pay for the cost of debt. Either the national taxpayers pay (under bailout), or bondholders pay (under no bailout and default), or local taxpayers pay (under no bailout and work-out). If national taxpayers are less valuable political constituents than either bondholders or local taxpayers, then a bailout will be likely.<sup>11</sup> This may well be the case when bondholders constitute the national median voter

---

<sup>11</sup> Again, this can be shown formally using the fiscal specification of Figure 1. National taxpayers must assume the costs of a local deficit and must pay in total a present value cost of area  $[B + C + D]$ , the size of the local debt. Assume the central government values each dollar paid by a typical national

(Aghion and Bolton, 1990), when the city is the national capital (Ades and Glaeser, 1995), or when local taxpayers are very poor and the services denied under any subsequent fiscal work-out are crucial services such as health care, income maintenance, or personal safety (Coate, 1995).

When the central government faces either high financial costs from default because of reputational or financial spillovers and/or high distributional costs because favored bondholders or local taxpayers are hurt without a bailout, then  $C_c^c > C_a^c$ , a bailout will occur, and inefficient local deficit-shifting will result. Alternatively, when the financial costs are low or zero and/or distributional costs are zero or even negative because national taxpayers are politically most important -- and these facts are known by all local governments -- then no bailout is preferred and fiscal efficiency obtains. Importantly, how we design the formal and informal institutions of fiscal policy-making can influence the level of financial and distributional costs of the no bailout option.

To control the financial costs of the no bailout strategy, reputational and financial spillovers must be minimized. Reputational spillovers are controlled by first removing any constitutional or statutory guarantees for local debt. Local debt must be viewed as a legally required obligation of the local government alone. Further, to ensure that local debt obligations can be repaid, local governments must have access to a stable source of own tax revenues. Finally, an historical precedence of no debt bailouts will heighten further the wall between local borrowings and the national treasury. To control

---

taxpayer as worth \$1; thus the distributional burden felt by the central government from the bailout strategy will be  $\$1 \cdot [B + C + D]$ . If the no bailout strategy is adopted, however, then the cost of the local debt will be paid by bondholders (if default) or by local taxpayers (if workout). Assume the central government values each dollar paid by a typical bondholder and/or local taxpayer as worth  $\$(1 + \nu)$ . If so, then the distributional burden felt by the central government from the no bailout strategy will be  $\$(1 + \nu) \cdot [B + C + D]$ . If  $\nu > 0$  so that bondholders and/or local taxpayers are valued more than an average national taxpayer, then the added distributional costs to the ruling central government from the no bailout strategy --  $(1 + \nu) \cdot [B + C + D] - [B + C + D] = \nu \cdot [B + C + D]$  -- are positive. However, if  $\nu < 0$  and bondholders and/or local taxpayers are valued relatively less than an average national taxpayer, then the distributional costs of the no bailout strategy will be negative for the central government.

financial spillovers, national regulations are needed to ensure that the debt issued by large local borrowers do not become a significant portion of the portfolio of any important national investor or network of investors. Having local debt held widely minimizes the force of a financial "too big to fail" argument for local bailouts.

To control the distributional costs of the no bailout strategy, national politics must place relatively more weight on national taxpayers than on debt holders or local taxpayers. Again, regulations requiring diversified holdings of local debt among many investors serves this end. Having many decentralized local governments with own source revenues or an active private economy providing competitive local services helps to ensure that the national government can say NO to the bailout requests of any individual local government.<sup>12</sup> Finally, nationalizing the provision of services crucial to pivotal national political constituencies helps break a dependency of national political fortunes on local public budgets; welfare services in poor developing economies is probably the most important of such services.<sup>13</sup> Here we are trying to control the political version of the "too big to fail" argument for local bailouts.

Even with these institutional safeguards, however, national politics might still favor a bailout policy. For example, if national policy is made by representatives of local governments through a decentralized (weak party) legislature, it will typically be in the private interests of each legislator to favor a bailout for any troubled local government. All that will be needed is a small amount of costly reputational or financial spillover from the defaulting local government onto the local governments of the

---

<sup>12</sup> While large local governments often make sense so as to internalize public service spillovers and to capture production economies of scale (e.g., water, electricity, and transit networks) there is no need to combine all large production units into a single government with a single borrowing power. Separate public utilities with separate borrowing powers will be just as efficient.

<sup>13</sup> One wants to use this argument with care, however. Since all services are in principle politically important to the national government -- i.e., every service has its constituency -- the argument here might be used to move all services to the national level. The result would be no local public sector at all, and of course no bailout problem. Obviously a balance must be drawn here between the dynamic risks of the deficit/bailout game and the static benefits of fiscal decentralization (e.g., allocations "closer to the people.").

other members to ensure that  $C_{\zeta}^c > C_{\alpha}^c$  for each member and a unanimous vote for the bailout strategy.

As with tax exporting and pork-barrel spending, strong presidents or strong political parties or a politically independent court or monitoring agency committed to efficiency become necessary complements to the formal institutions of fiscal discipline.<sup>14</sup>

If these institutional incentives for the central government to adopt the no bailout strategy are not successful -- perhaps because national politics favor local interests -- then, we must turn to a second line of defense: discourage the local government from borrowing, even if a central government bailout will occur. Here we propose an extra-legislative, regulatory fiscal institution which raise the local costs

---

<sup>14</sup> Imagine the national government decides policies through a legislature composed of representatives from each of  $N$  identical local governments. The legislature must decide to bailout, or not, any local government with unfunded deficits. From the fiscal model of Figure 1, this will require a nationally funded payment of area  $[B + C + D]$  to the local government seeking the bailout. How will the  $N$  members of the legislature vote on such a petition for relief? Clearly the member representing the local government in default will favor the petition, but what about the other  $N - 1$  members? Each of those  $(N - 1)$  identical governments will pay  $C_{\alpha}^c = (1/N) \cdot [B + C + D]$  for the bailout. If the no bailout strategy is chosen, then a typical  $i$ th member's district bears a financial cost of  $F_i$  and a distributional cost of  $(1 + v_i)\{\delta_i[B + C + D]\}$ , where  $\delta_i$  is the share of defaulted debt borne by district  $i$ 's residents. Thus  $C_{\zeta}^c = F_i + (1 + v_i)\{\delta_i[B + C + D]\}$ . If we assume that local debt is uniformly distributed among national residents --  $\delta_i = (1/N)$  -- and that national legislators value income to their resident bondholders at the same rate they value income to their resident taxpayers -- i.e., no distributional preference within districts, so  $v_i = 0$  -- then we see  $C_{\zeta}^c > C_{\alpha}^c$  as long as  $F_i > 0$ . It takes just a little reputational or financial spillover to ensure a unanimous vote for a bailout.

What is needed here are strong presidents (e.g., Fitts and Inman, 1992) and/or strong political parties (Wittman, 1989) who can contract around this dynamic inefficiency by compensating those who vote no on bailouts with a payment larger than  $F_i$ . Such compensation is politically feasible as long as the total payments to the needed majority of  $[(N+1)/2] \cdot F_i$  is less than the efficiency savings of area  $[D]$  in Figure 1. While a strong president or political party is needed to block the myopic voting of individual legislators, note too that the institutional rules outlined above that reduce the costs of reputational and financial spillovers (the  $F_i$ 's) will improve the chances that the national politicians can form a winning coalition to ensure efficiency. Again, we note that good budgetary rules and good budgetary politics are both needed for fiscal efficiency in federal systems.

If effective national politics fails to check the temptation of a widespread local bailout, then constitutional prohibitions on the level of local debt may be needed; see Epple and Spatt (1986). For a concrete example of such a prohibition in response to the voting dilemma described above, see fn. 23 below.

of local deficits. If  $C_a^1$  can be increased to  $C_a^{1'}$  so that now  $B^1 - C_a^{1'} \leq Q^1$ , then CONDITION 2a of EXHIBIT II will no longer hold, and the inefficient deficit-shifting strategy will be defeated. The institution proposed here is a conditional bailout strategy supervised by a politically independent national bankruptcy court or regulatory agency. The bankruptcy court can raise the local costs of a bailout by imposing either (i) a *co-payment* requirement or (ii) a bailout penalty (e.g., reduced intergovernmental grants) or by establishing a bailout oversight board capable of altering the local budget towards allocations only favored by the national government (e.g., reduced local rent-seeking). If the conditional bailout strategy imposes a sufficiently high co-payment or a sufficiently onerous bailout penalty or oversight process, then  $C_a^{1'}$  will be large enough that now  $B^1 - C_a^{1'} < Q^1$ , and the local government will prefer the balanced budget/status quo strategy over deficits followed by a conditional bailout.<sup>15</sup> The

---

<sup>15</sup> From Figure 1, the costs to the local government when there is a full and unconditional bailout will be  $C_a^1 = \text{Full Costs} - \text{Full Bailout} = \text{area } [B + C + D + E + F] - \text{area } [B + C + D] = [E + F]$ . A conditional bailout -- using either a co-pay, a penalty, or oversight -- will pay only a fraction of the original bailout of area  $[B + C + D]$  to the local government, or  $(1 - \hat{\epsilon}) \cdot [B + C + D]$ , where  $\hat{\epsilon}$  is the rate of co-pay, penalty, or oversight burden. Now local costs will equal  $C_a^{1'} = \text{Full Costs} - \text{Conditional Bailout} = [B + C + D + E + F] - (1 - \hat{\epsilon})[B + C + D] = \hat{\epsilon}[B + C + D] + [E + F] > C_a^1 = [E + F]$ .

To ensure that the local government prefers the balanced budget/status quo to deficits with a conditional bailout,  $C_a^{1'}$  must be large enough that  $B^1 - C_a^{1'} \leq Q^1$ . From Figure 1,  $B^1 = \text{area } [A + B + C + E + F]$  and  $Q^1 = \text{area } [A]$ . Given the definition of  $C_a^{1'}$ , the balanced budget/status quo allocation will be preferred if:

$$[B + C] - \hat{\epsilon}[B + C + D] \leq 0;$$

or if the required rate of co-pay, penalty, or oversight burden satisfies:

$$\hat{\epsilon} \geq [B + C]/[B + C + D].$$

It can be shown that for Figure 1 fiscal choices, this condition can also be written as:

$$\hat{\epsilon} \geq 1 - \hat{\alpha}/\hat{\Omega},$$

where  $\hat{\alpha}$  is the ratio of economic inefficiency to total local spending ( $\hat{\alpha} = \text{area}[D]/\text{area}[B + C + D + E + F] = \text{rate of "excess burden"}$ ) and  $\hat{\Omega}$  is fraction of total local costs shifted through deficit financing in Figure 1. For example, if  $\hat{\Omega} = .50$  and  $\hat{\alpha} = .20$ , then  $\hat{\epsilon} \geq .60$  is needed to discourage local deficit shifting. Further,  $\hat{\epsilon}$  can be estimated with knowledge of local governments' demands for local services and the (assumed exogenous) potential level of local deficit shifting. In the limit, if  $\hat{\Omega} = 1$ , then  $\hat{\epsilon} \geq 1 -$

efficient allocation  $X_e$  then results. Of course, the national government must prefer the conditional bailout strategy to the unconditional bailout. This will occur if the co-payment, penalty, or the benefits from oversight are transferred from the local government to the constituents of the national government and if the costs of enforcing the conditional bailout are not too high. A high rate of co-payment or bankruptcy penalty helps to ensure that the national government will at least impose the conditional bailout strategy -- the bankruptcy court -- and further, and most importantly, that the strategy will deter excessive local borrowing.<sup>16</sup>

Finally, there is a third line of defense against excessive local debt: constitutional based prohibitions on local borrowing through balanced budget rules (BBR's). Here all local and national political discretion is removed. A rule is written, it is constitutionally grounded, and it is enforced by an outside watchdog agency, whether a court or regulatory body. Debt will be allowed for approved

$\bar{a}$  is necessary for deficit control.

The analysis here assumes an exogenous level of local debt,  $\bar{A}$ , fixed perhaps by an exogenous project size. If local borrowing is endogenous, then it can be shown that  $\bar{A}(\bar{\epsilon})$ , where local deficit shifting falls as the rate of copayment rises, and in the limit,  $\bar{A} = 0$  for  $\bar{\epsilon} = 1$ . In this more general model, high copayments still control inefficient local borrowing.

<sup>16</sup> The choice between a conditional and unconditional bailout must be the choice of the central government or regulatory agency or court, and not the local government. Given a decision to prefer bailout, the central government will prefer the least costly bailout strategy. Consider again the case of a decentralized legislature each of whose members prefers the unconditional bailout strategy to the no bailout strategy when  $F_i > 0$ ; see fn. 13. If a bailout occurs,  $F_i$  then equals 0. The cost to a typical legislator of the unconditional bailout will be  $(1/N) \cdot [B + C + D]$ . The cost of the conditional bailout will be  $(1/N) \cdot [B + C + D] - (1/N) \cdot (\bar{\epsilon} - \underline{\epsilon}) \cdot [B + C + D]$ , where  $\bar{\epsilon}$  is the rate of co-payment (penalty, oversight) allocated back to the national government and  $\underline{\epsilon}$  is the rate of administrative or enforcement expenses associated with running the conditional bailout system. If the returns from the conditional bailout exceed its costs ( $(\bar{\epsilon} - \underline{\epsilon}) > 0$ ) then the conditional bailout will be preferred. Happily, the conditional bailout option -- bankruptcy court -- will be preferred by the central government when it is most likely to be effective in discouraging local deficits -- that is, when  $\bar{\epsilon}$  is high. Care must be taken to ensure that  $\bar{\epsilon}$  does deter local debt, however. If  $(\bar{\epsilon} - \underline{\epsilon}) > 0$  making the conditional bailout preferred to the unconditional bailout but  $\bar{\epsilon}$  does not deter local borrowing, it is possible that the national government will prefer the conditional bailout to no bailout but no bailout to a very expensive unconditional bailout. Here the conditional bailout (which does not deter excessive borrowing) "crowds out" what would have been a more effective no bailout choice by the national government. To prevent crowding out of the more effective debt deterrence strategy,  $\bar{\epsilon}$  must be set high enough to ensure local governments will not borrow; see fn. 15.

capital outlays -- the so-called "golden rule" BBR -- but not for current accounts expenditures. Clear accounting standards will be needed to ensure the enforcement of the rule with a focus on the ex post, end-of-year budget to minimize the use of accounting gimmicks which overstate revenues and underestimate costs; see Inman (1997).

Based on the analysis above, EXHIBIT III summarizes the constitutional rules and the formal (constitutional) and informal (political) enforcement institutions needed to establish a hard budget constraint for local governments in a federalist public economy. The rules and institutions establish three lines of defense against the always present temptation for local governments to tap the national treasury through cost-shifting.

The first line of defense is to provide the national government with the political incentives to "Just Say No" to local requests for unwarranted transfers. For tax-exporting and pork-barrel spending this is achieved by setting a high constitutional hurdle (i.e., an amendment needing 2/3's approval) for any national transfers by limiting local government to resident-based taxation and low spillover services. The constitutional rule is then enforced by an independent court or regulatory agency backed by a politically strong president or political party committed to a national interest in economic efficiency. To limit excessive local deficits, constitutional rules are needed which: 1) do not promise debt bailouts; 2) do give local governments a resident-based tax to repay their own debts; 3) discourage "sympathy bailouts" by giving the national government responsibility for low income assistance; 4) require many local governments; and 5) require diversified portfolio holdings for local debt. As with the rules to discourage tax-exporting and pork-barrel spending, independent enforcement will also be needed. If the national government does say "Yes" to unwarranted transfers, then a second line of defense will be needed which makes accepting those transfer costly to the local government. Here is the role for a bankruptcy code which requires that if a local debt bailout is paid, the local government shares in its costs through co-payments, penalties, or oversight. If the costs are high enough, then the local government will not pursue the deficit-shifting strategy. To be effective, however, enforcement must again be done by a

politically independent court or oversight agency. Finally, if the first and second lines of defense are ineffective, then the third and last line of defense for the hard budget constraint must be the outright prohibition of the cost-shifting strategy. In the case of deficit-shifting, this is achieved through balanced budget rules requiring ex post accounting, again enforced by an independent court.

### **III. Finding Fiscal Discipline in The U.S. Historical Record**

The U.S. public economy is viewed by many as one federalist system which has successfully established the principle of fiscal discipline for its local and state governments. While this impression is largely correct, there have been several notable exceptions in the U.S. historical record. Reviewing this record provides hard evidence for the importance of the rules and institutions outlined in EXHIBIT III. In each instance where the local budget constraint has turned "soft," one of the key rules or institutions in EXHIBIT III was found missing.

#### **A. The U.S. Evidence on Tax-Exporting and Pork-Barrel Spending**

The U.S. Constitution limits the taxing powers of state and local governments only by denying the subnational government the right to impose duties on imports and exports into the state. All other taxes, provided they are uniformly assessed, are legal. As a consequence, state and local governments have actively sought to reduce tax burdens on their own residents through the taxation of non-residents, whether through the taxation of commercial-industrial property, severance taxes on natural resources, local profits and sales taxes, or the taxation of the incomes of non-resident workers. This strategy is constrained by the ability of non-residents to exit the taxing jurisdiction, and there is strong evidence that non-residents will leave high tax for low tax jurisdictions (Wilson, 1999). Still, states and cities with unique locational advantage will retain taxable non-resident tax base. There is good evidence that both state (Kolstad and Wolak, 19xx) and local governments (Ladd, 1975) impose taxes on their non-resident base so as to cross-subsidize local services provided to their own residents. The effect is to increase local government services above the socially efficient level creating a "triangle" of economic

waste shown as area [D] in Figure 1. Conservative estimates place this inefficiency at from \$.03 to \$.05 per dollar of state and local government spending, or about \$130 to \$200 per U.S. resident per year.<sup>17</sup>

This inefficiency arises because U.S. state and local governments are allowed to tax non-residents through an inefficient local tax on capital. Limiting U.S. states and cities to the taxation of resident income or resident property alone would correct this problem. It must be noted that the extent of these local tax inefficiencies are significantly reduced by the mobility of capital and labor within the U.S. economy. The large cities and provinces within developing economies may not be so constrained. Appropriate tax assignment will be all the more important here.

The U.S. federal public economy performs no better when it comes to controlling pork-barrel spending for state and local government infrastructure projects and grants-in-aid. Other than print money or run an army or navy, there are no constitutional restrictions on the services that U.S. state and local governments can provide. As a consequence, U.S. state and local governments provide all manner of goods of services. Indeed, other than national defense, the state and local sector is the primary provider of government services in the United States, and significant fraction, over 20 percent, of these services are financed by federal grants-in-aid. An analysis of the contemporary period (1950-1985) of U.S. congressional budgeting revealed that U.S. grants policies are rarely set according to the principles for efficient spillover grants but are rather determined by a system of decentralized politics which give each congressional district federal monies for its own state or local governments; see Inman (1988). An analysis based on Figure 1 again provides a good description of how local cost-shifting occurs; area [D] again provides a measure of the economic inefficiency from this form of local cost-shifting. Inman estimates the rate of inefficiency at \$.17 for every federal grant dollar sent to the state or

---

<sup>17</sup> These estimates are based upon the current 1998 budget levels for the aggregate size of the state and local sector of \$4500 per resident. The demand curve is assumed to have a price elasticity of  $-.60$  (see Ladd (1975)) with 30 percent of state and local taxes shifted onto to non-residents. In terms of Figure 1,  $X_e = \$3633$  per resident,  $X_i = \$4500$  per resident,  $MC = \$1$  and  $(1 - \ddot{O}) \cdot MC = .7$  as  $\ddot{O} = .30$ . Area [D] is therefore estimated as  $.5 \cdot (1 - (1 - \ddot{O})) \cdot (X_i - X_e) = \$130$ . For an upper range demand elasticity of  $-1.0$ , area [D] would equal \$202. See Wildasin (1989) for similar estimates for the U.S..

local sector or about \$192 per U.S. resident at today's grants levels. Importantly, however, Inman's analysis also shows that a politically strong President can check the propensity of the national legislature to favor local interests through inefficient grants spending. Ronald Reagan's first budgets successfully reduced federal grants-in-aid by \$36 per resident per year or 20 percent. This tendency of the national legislature to inefficiently favor local interest unless checked by a politically strong President or political party is a familiar theme in U.S. fiscal history; see, for example, Arnold (1979), Inman and Fitts (1992) and Stewart (1989).<sup>18</sup> Again, it is a lesson worth teaching to other federalist democracies.

### **B. The U.S. Evidence on Deficit-Shifting**

The U.S. fiscal record is marked by four major episodes of state and/or local government deficit shifting followed by potential bailouts or defaults. Each episode provides important insights into how a national government might impose a hard intertemporal budget constraint on its subnational units.

**1. The 1840's Default by U.S. States:** The 1840's default by eight U.S. states (Arkansas, Illinois, Indiana, Louisiana, Maryland, Michigan, Mississippi, and Pennsylvania) and one territory (Florida) and the decision by the U.S. federal government not to bailout or aid the troubled states was a defining event in U.S. fiscal relations for at least three reasons. First, and for the first time, the federal government said NO to a state or city request for financial assistance in times of a debt crisis.<sup>19</sup> Denied federal relief, the defaulting states worked through the crisis either by repaying their debts in full (Pennsylvania and Maryland) or part (Arkansas, Indiana, Illinois, Louisiana, Michigan) or by repudiating (Mississippi and Florida) their outstanding debts. Second, and importantly, the bond market responded

<sup>18</sup> The importance of a strong president to control local access to the national treasury was first made clear by Andrew Jackson's veto in 1830 of a federal subsidy for a local road in Maysville, Kentucky, being built for the benefit of the local residents only.

<sup>19</sup> Prior to 1840, the U.S. government had always assumed the debt of troubled states or cities. As part of the compromise to form the Union and to set the national capitol in Washington, D.C., the federal government assumed the revolutionary war debts of the states; see Ratchford (1941, Chapter 2). In 1802, the national government paid the debts of American merchants owed British merchants. Finally, in 1836, the federal government bailed out the District of Columbia from a debt of \$1.5 million; see McGrane (1935; p. 37).

rationally. Those states that repaid their debt were soon able to return to the international capital markets without interest rate penalties. Those states that repaid only partially were able to borrow again but faced a small interest rate premium. Finally those states that refused to repay their debts were denied access to the bond market for at least the next twenty years; see English (1996). Third, given this rational response of the bond market to the threat of default, states soon recognized the importance of a credible signal that future defaults were not likely. States adopted, on their own, balanced budget rules (BBR's) as a promise that excessive borrowing -- debt not matched by some income producing asset -- would no longer be tolerated. Once the trend started, new states entering the Union found it prudent to also adopt a BBR. Today all but Vermont have a balanced budget rule in some form; see Bohn and Inman (1996). Importantly, the contemporary evidence will show that those states which adopted constitutionally grounded, ex-post BBR's would enjoy the most favorable interest rate advantages (Bayoumi, Goldstein, and Woglom, 1995) and have the lowest levels of excessive deficits (Bohn and Inman, 1996). If the national government can say NO and adopt the no-bailout strategy (☺ of EXHIBIT II) and if the capital markets are sufficiently capable of judging local deficit levels, then good intertemporal local budgeting can result.

Two facts proved particularly important to the ability of President Tyler to say NO to a request for a state debt bailout.<sup>20</sup> First, the distributional costs to the President of refusing to bailout the troubled states were very low. The majority of the bondholders were Europeans, not U.S. citizens, and of the U.S. bondholders most were wealthy industrialists and bankers. It was not difficult politically to leave these bondholders at risk, particularly following 12 years of Jacksonian democracy with its strong

---

<sup>20</sup> In a message to the European lenders, Tyler wrote that the states alone were responsible for the repayment of their debts, adding that each state would "feel itself bound by every consideration of honor, as well as of interest, to meet its engagements with punctuality." (McGrane, 1935, p. 31). There was in fact a bailout proposal on the table at the time of Tyler's decision, offered by Representative Johnson of Maryland (one of the defaulting states). Johnson's plan was to propose the sale of public lands to generate the needed revenues to repay not only the debts of the defaulting states, but of all states and even cities too. For reasons noted below, Johnson's proposal was never approved by Congress or embraced by Tyler; see McGrane (1935, pp. 34-40).

emphasis on a limited federal government and its support for the economic interests of the lower classes against a "moneyed aristocracy."<sup>21</sup> If a state chose to repay its debt, the taxes to do so would again come primarily from wealthy landowners through revenues from a property tax; indeed the initial inability of Indiana to repay its debts arose from the collapse of land values beginning with the depression of 1839; see Wallis (1998). Second, the economic or financial costs of the no bailout strategy, both to the national government and to the other fiscally stable states, were very low if not zero. Fears that foreign investors would seek to collect the debts by force were quickly put to rest. At the very start of the crisis, Lord Palmerston, the British Foreign Secretary at the time, refused to forward to the British Minister in Washington a communique from European financiers demanding payment from Mississippi by noting that "British subjects who buy foreign securities do so at their own risk and must abide the consequences" (McGrane, 1935, p. 202). Threats of cutting off trade credit to the defaulting states also proved groundless (English, 1996, p. 268). The only possible costs were to come from a reputational spillover from the defaulting states to other U.S. governments. But these costs proved small as well. The interests costs paid by the Federal government were effectively unchanged over the 1840's, as were the interests costs paid by states which did not repudiate their debt. By the 1850's, even Louisiana which refused to pay the debts of its state bank, was able to borrow at the market rate paid by non-defaulting states for other, non-banking state purposes, because it had repaid all of its non-banking debt obligations (English, 1996, p. 269). The bond market was not only able to distinguish the risks of credits of different states and levels of governments, it was also able to distinguish risks between bonds from the same state. With this degree of market sophistication, reputational spillovers were very low indeed. The combination of low distributional costs and low financial costs at the time of the 1840's crisis made the no bailout strategy the preferred choice of President Tyler. Given the no bailout choice,

---

<sup>21</sup> Jackson wrote: "I am one of those who do not believe that a national debt is a national blessing, but rather a curse to a republic; inasmuch as it is calculated to raise around the administration a moneyed aristocracy dangerous to the liberties of the country;" Schlesinger (1945, p. 36). In terms of the formal model outlined in Section II, the national government valued the interests of bondholders less than the interests of the average national taxpayers -- that is  $v_i < 0$  in fn. 13.

states responded rationally, and efficiently, with balanced budgets and BBR's as signals of their improved budget discipline.

**2. The 1870's Defaults by Southern States:** The period 1868-1876 marked a low point in the quality of American democratic rule. With the passage of the Reconstruction Act of 1867, the defeated Southern states were turned over to the rule of military commanders and to hastily convened state legislators largely composed of newly freed Negroes with little or no education and northern "carpetbaggers" sent to manage the affairs of the southern states and cities. Once new legislators approved a new state constitution and the XIVth Amendment, the states were re-admitted into the Union and the military commanders withdrew. A leadership vacuum ensued, soon filled by what one commentator called "the most ignorant, corrupt, and venal lawmakers ever to hold office. . . . (T)hose in control were out to loot and plunder. The credit of the states was the vehicle whereby much of the stealing was accomplished" (Ratchford, 1941, p. 169). The result was the accumulation of new debts for the Southern states of \$101.2 million in a little over four years (Ratchford, 1941, p. 183). The four states thought to have had the worst reconstruction governments -- Florida, Louisiana, North Carolina, and South Carolina -- borrowed nearly 2/3's, or \$64 million, of the total, most of it eventually wasted or stolen. By mid-1870's, however, the franchise had been restored to ex-confederates. New Democratic governments were elected, ousting the carpetbaggers and defeating most of the Negro legislators. One of the first actions of the new governments was to repudiate the debts of their corrupt predecessors.

There was never any question of asking the federal government to repay these debts, nor apparently were there any expectations on the part of the investors that they would be bailed out. A majority northern Congress was unlikely to have much sympathy with the taxpayers of the recently defeated southern states. Further, those who had purchased the debt were largely European investors, and as in 1840's, they continued to hold little U.S. political favor. For both reasons the distributional costs of the no bailout strategy were low. Finally, and again as in 1840's, the bond markets correctly

distinguished good risks from bad. The European investors demanded significant interest rate premiums for the risks that they were taking, and they successfully identified where those risks were largest. At the same time that New York and Ohio were able to borrow at rates between 5-6 percent, and Georgia as one of the better managed southern states from 6-8 percent, Louisiana faced interest rates of from 10-15 percent, South Carolina paid between 20-30 percent, and North Carolina could only borrow at rates between 15 to 35 percent; see Ratchford (1941, p. 179).<sup>22</sup> In the end, virtually all of the reconstruction debts wasted on corrupt transfers were left unpaid by the new elected southern governments, while those debts funds allocated to legitimate infrastructure construction were generally repaid but at a discount (Ratchford (1941) pp. 183-196, and Scott (1893)). Interest rates paid by the post-Reconstruction state governments, no longer marred by corrupt leadership, soon returned to the competitive rates of their northern counterparts. The lesson of the 1840's proved robust: With sophisticated bond markets, debt bailouts only make sense to the national government if there are significant political advantages to the redistributive transfer. Lacking that advantage, the no bailout strategy was again preferred. Finally, realizing they faced the bond market on their own, the newly elected state governments sought to signal their commitment to fiscal responsibility by including in their constitutions balanced budget amendments to control current accounts borrowing and aggregate limits to control total debt; Ratchford (1941, 192).<sup>23</sup>

---

<sup>22</sup> Interest rates for Florida were not available but one commentator noted after Florida bonds were sold in Holland that the Dutch "syndicate took the bonds as a speculative venture, for the story of fraud and corruption was circulated in Holland as in other countries of Europe." The bond market again seemed to understand the realities of U.S. politics.

<sup>23</sup> One of the worst abusers of debt financing during the Reconstruction period was South Carolina. In 1873, South Carolina approved an amendment which forbid **any** new state debt unless approved by a 2/3's majority in a direct vote of the citizens.

Rather than a check on outright corruption, Illinois passed its debt limitation as a way to limit the damage which might occur when a decentralized legislature faced universal bailouts to cover excessive and widespread local borrowing, as modelled in fn. 14. One member of the Illinois Constitution Convention arguing on behalf of the debt limitation was quite clear on the point: "I can see like a creeping shadow on the wall, the time approaching when a log-rolling scheme will be brought into some future legislature, to saddle on the state of Illinois, the assumption of that \$40 million (of local indebtedness) perhaps twice, aye! thrice fold. I regard this section as of the intensest importance; as the

**3. The Municipal Default's of the 1930's:**<sup>24</sup> With the emergence of the automobile and the beginning of suburbanization in the 1920's came a new demand for public capital. Highways needed to be built and the infrastructure of new communities put in place. The level of capital investment by U.S. cities over 30,000 roughly doubled from 1920 to 1930, while the annual issue of new debt more than doubled, rising from \$595 million to \$1,250 million. The growth in infrastructure spending and debt was strongest in the fastest growing, large population states: New Jersey, Illinois, Florida, Missouri, Michigan, Pennsylvania, New York, Texas, California. Virtually all of this debt were general obligation bonds backed by the property tax base of the issuing governments; revenue bonds supported by fees and earmarked taxes accounted for less than 6 percent of this new debt. The debt explosion placed a growing debt service burden on the property tax base of U.S. cities. By 1932 debt service payments exceeded 15 percent of annual spending in fourteen states; nineteen more states had annual burdens over 10 percent of annual spending. Any significant downturn in tax base would threaten the ability of high debt communities to meet their interest and principal obligations. The downturn came with the Depression of 1932. The Depression had two important consequences for the ability of cities to repay their debts. First, property values declined, or at least failed to grow as anticipated when the debt was first issued. This fall in tax base placed a significant strain on tax rates. Second, service demands increased; the local public sector in the 1930's still had a significant fiscal responsibility for services to low income households and for unemployment relief. In the face of new spending demands and falling tax base, cities choose debt financing over a tax increase. Debt coming due was "rolled-over" and

---

ounce of prevention that some day will save more than a pound of cure." (Quoted in Hillhouse, 1936, p. 323).

<sup>24</sup> Unless noted, the analysis for this period follows from the data and discussion in Hillhouse (1936), Chapters 1, 11, 12 and Appendix A.

increases in poverty spending were financed with new borrowings. While this "tax-smoothing" strategy might have succeeded with a short economic downturn, it did not work for the prolonged recession of the 1930's. The result was an explosion of municipal defaults, rising from 678 state or local governments in default in 1932 to over 3200 governments in default by December, 1935. (For all of the five years prior to 1932, the total number of state and local defaults was 226.) By 1937, 14 percent of the of the 3,053 U.S. county governments and 12 percent of the 310 cities with populations greater than 30,000 were in default. In dollar terms, \$.16 of every dollar of outstanding state and local debt was in default; see Hempel (1971), p. 22. In contrast to the 1840's and the 1870's, the 1930's defaults were not limited to a few governments nor were they the result of obvious fiscal mismanagement or corruption. Nor was the outstanding debt now held by European investors; state and local governments owed the money to politically influential, upper income Americans. Would the "no bailout" strategy be chosen for this fiscal crisis?

It was not. In contrast to the two previous periods of major defaults when the federal government chose to leave the defaulting governments to their own devices, now the decision was made to offer state and local governments a fiscal bailout.<sup>25</sup> But importantly, the bailouts were conditional.<sup>26</sup>

---

<sup>25</sup> In contrast to the 1840's and 1870's bailout decisions, the balance of national government's benefits and costs weighed in favor of the bailout strategy in the 1930's. First, the 1930's defaults were widespread and the defaulting local governments were not easily distinguished from non-defaulting governments; see Hillhouse (1936), pp. 420-423:

State defaults in the South, and an occasional failure on the part of southern municipal officials to meet their debt charges on time, have prejudiced investors against southern municipal, despite the fact that municipal credit in that section cannot be regarded as a homogenous whole. Other examples of the mutual interdependence of credit could be cited. . . (p. 423)

Thus, the financial spillovers from failing to bailout the defaulting governments were more significant for the non-defaulting governments in the 1930's ( $F_i > 0$ ). Second, with outstanding debt now concentrated among American bondholders, not Europeans, the distributional costs of a no bailout decision to state and national political leaders were significantly increased. Further, and in contrast to today, upper income investors (annual incomes  $\geq$  \$5000) owned a relatively small share of outstanding municipal debt, probably less than 40 percent; Hillhouse (1936) p. 432. These two facts suggest the 1930's municipal bondholders deserved serious "distributional" consideration when compared average

Financial aid for local governments in fiscal distress was paid through the Reconstruction Finance Corporation and the Federal Emergency Administration of Public Works. Importantly, the assistance covered only a small part of the costs of the defaulted debt. Consistent with the theory of an efficient conditional bailout, the defaulting local governments were generally expected to pay a significant fraction ( $\hat{\epsilon}$ ), in many cases all, of their outstanding obligations. Further, the federal money and accompanying state relief came with oversight by a higher level of government, typically a state appointed supervisory board. These boards monitored the daily finances of the troubled local governments by collecting taxes, monitoring expenditures, and then establishing sinking funds for debt repayment. The role of the conditional federal and state bailouts were to ensure timely payments of interest and principal and the long-run solvency of the local government. The strategy seems to have succeeded on both counts. Hempel (1971, p. 24) estimates that by 1939 no more than \$50 million in principal or interest of defaulted government had not been repaid (less than 2 percent of the 1937 debt at risk), and by 1946 the slate had been cleared.

While the conditional bailouts of the 1930's provided the money for repaying defaulted local debt, payment was often delayed. In these circumstances, a mechanism for balancing competing creditor interests would be required. In particular, localities seeking to negotiate an orderly work-out of local obligations often faced the problem of an intransigent creditor, holding out for a larger portion or a quicker payment of the settlement (O'Connell (1993), pp. 449-450). The Federal Municipal Bankruptcy Act of 1937 provided the needed procedure by allowing claims to be settled with the agreement of the taxing jurisdiction and by creditors holding 3/4's of the affected claims. But the Act and its subsequent revisions (most recently in 1988) have done no more than ensure an orderly means

---

national or local taxpayers ( $v_i \geq 0$ ). When  $F_i > 0$  and  $v_i \geq 0$ , the bailout strategy is preferred; see fn. 13.

<sup>26</sup> A national or state government's choice between a conditional and unconditional bailout turns on relative costliness to the two strategies. If the co-payment rate is set high enough so as to exceed administrative expenses, the conditional strategy will be preferred. This seems to have been the case. Full assumption of the local debt of defaulting governments occurred in only two instances, one in Arkansas and one in Texas, and both for were for building state roads. See Hillhouse (1936), p. 332.

for balancing creditors' competing claims. Importantly for this analysis, neither the 1937 Act nor its successors provide for uniform oversight or a conditional bailout procedure for cities or states in credit distress.<sup>27</sup> The municipal defaults of the 1930's gave rise to the conditional bailout strategy for managing fiscal distress, but the experiences were never codified into a uniform set of rules for co-payment and oversight.<sup>28</sup> The ad hoc, and largely political, nature of the co-payment and oversight process of the 1930's remains the norm for the conditional bailouts of today.

**4. Municipal Defaults Since 1970's:** Three municipal defaults, or near defaults, define the key parameters of the current U.S. strategy for controlling local government deficit shifting: the Bridgeport CN (1991) default testing the limits of judicial intervention within the current U.S. bankruptcy law; the New York City (1975) default testing the limits of U.S. federal government involvement; and the Philadelphia (1990) default testing how far state governments might go to aid their major central cities.

---

<sup>27</sup> The 1937 Municipal Bankruptcy Act was originally written as a temporary act to facilitate work-outs for the 1930's defaults, but in the process it set the tone for all subsequent federal legislation. It was made permanent in 1946, with only minor revisions since, most recently in 1988. The spirit of the 1937 Act can be found in the long U.S. legal history prior to 1937; see O'Connell (1993), pp. 429-450. The fundamental tension in the case law was between sovereign immunity protection for states from suits by individuals (XIth Amendment) and the Contracts Clause of the Constitution (Article I, Section 10) making it unlawful for any state to impair the obligation of contracts. The Contracts Clause ensured that any bankruptcy legislation would be federal; the XIth Amendment meant that the law would have a very narrow scope, and in particular, that state approval (perhaps only inferred from a related state regulation) would be needed for any municipality filing for bankruptcy.

<sup>28</sup> Nor has the U.S. case law on municipal bankruptcy provided much guidance for the structure of conditional bailouts. On the contrary, the primary purpose of the U.S. case law has been to restrict the ability of creditors to find relief (co-payment) using the courts. Current U.S. case law does not allow creditors to: 1) seize city or private property within the city; 2) obtain a lien against future taxes; 3) ask the court to supervise the government's budget (though state supervision is allowed); or 4) compel state government to pay the debts of its municipalities. In certain instances, creditors can obtain a writ of mandamus requiring the imposition of new taxes -- for example, the state constitution explicitly states that taxable property within the city shall be made available to pay city debts or the debt contract itself requires the levying of sufficient taxes to repay the debt. Lacking such specific protections, however, municipal creditors have little legal protection through the U.S. courts. More practically, requiring cities to raise revenues they do not have is hardly a remedy for creditors. As noted by a 1942 court, the historical remedy of mandamus is largely "empty" (O'Connell (1993), p. 454). For the U.S. courts, conditional bailouts and creditor relief is a political, not a judicial, decision.

Bridgeport is Connecticut's largest city and also its poorest. On June 6, 1991, the Mayor of Bridgeport filed a petition in the U.S. Bankruptcy court to have her city declared bankrupt under the provisions of Chapter 9 of the U.S. Bankruptcy Code. The intent in filing was to utilize the Bankruptcy Code to restructure the city debt payments and in the mayor's words (and more controversially) "to modify certain onerous and economically burdensome contracts" (Bridgeport, 1991). There was little question that the City was in deep fiscal distress at the date of filing. It was running a \$16 million deficit, had the highest tax rates in the state, and was already being supervised by a state oversight board as part of a 1988 state guarantee of \$35 million of City bonds. For the court, however, distress was not the issue. Under the rules of Chapter 9, a city filing for bankruptcy must be insolvent, and this the court took to mean, literally, "out of cash" (*Bridgeport*, 129 Bankr 332, D Conn, 1991, pp. 337-338). At the time of filing, Bridgeport had a deficit of \$16 million but the city also had \$27.9 million in an interest-bearing account. A cash flow analysis projected a positive end-of-year balance of \$12.5 million. Because of the positive balance, the judge ruled that Bridgeport did not meet the insolvency test of the current federal law and thus was not eligible for bankruptcy protection and a court supervised conditional bailout. The Bridgeport ruling cannot be considered exceptional. It confirmed what most general purpose local governments already knew. The Bankruptcy Court is not the place to look for fiscal relief. Only 15 municipalities applied for bankruptcy between 1980-1991, and of those only 4 small communities actually received protection; see Lewis (1994), p. 6. If a U.S. city wants a conditional bailout, it will have to come from political negotiations with either its national or state government.

New York City went to Washington for a bailout following its financial collapse in the summer 1975. Facing budget deficits estimated at close to \$1 billion on a cash flow basis and nearly \$4 billion (1/3 of the city's \$12.1 billion budget) if all outstanding short-term debt had to be repaid -- a real possibility since the city had been denied access to the short-term debt markets since the Spring, 1975 -

- it was essential that someone come to the rescue of the city.<sup>29</sup> The State of New York responded with an advance on state grants-in-aid (but not new monies) and the creation of the Municipal Assistance Corporation (MAC) with a \$3 billion borrowing authority as a means to access the bond markets on the city's behalf. MAC was given the revenues from the city's 4 percent sales tax as a means to guarantee its bonds. The major banks in the city, and at a latter date even the public employee pension plans, purchased MAC bonds. However, the bankers found it extremely difficult to re-market the bonds except at significant discounts. This fact discouraged additional bank borrowing.<sup>30</sup>

By September, 1975 it was clear that without a restructuring of how fiscal business was conducted in the city, the bond market was not going to lend additional monies, MAC or no MAC. At this point, newly elected governor Hugh Carey took control. With the approval of a special session of the state legislature, Carey created the Emergency Financial Control Board to oversee the management of city finances. The Board, controlled by a majority of Carey appointees, was given the power to set budgets and to approve all city contracts, including labor contracts. A new accounting system based upon GAAP principles was also introduced. The Control Board began a process that would eventually cut municipal employment by 20 percent, freeze public employee pay, cut pension benefits and begin full funding, introduce tuition at the City University, and raise transit fares. Still, the general distrust of city finances was so strong that even these promised, and in the end successful, measures were not enough to induce investors to lend additional money to the city. Federal loan guarantees would be needed.

Initial visits to Washington in the summer of 1975 by the MAC leadership, ostensibly to brief Treasury Secretary William Simon and Federal Reserve Chairman Arthur Burns on the severity of the

---

<sup>29</sup> The causes of the New York City fiscal crisis are familiar ones for large U.S. cities: sizeable welfare payments, large labor budgets, and underfunded public employee pensions now coming due. These big spending items were compounded, literally, by significant interest payments to service a stock of short-term deficits accumulated over the previous decade through the use of "debt-rollovers."

<sup>30</sup> Then Mayor Beame continually pushed the banks to buy and hold more of the City's short-term debt in their own portfolios. But given the risky nature of City debt and Federal Reserve Bank portfolio regulations requiring investment grade investments, this was not an option. The effect was to force the city's new debt into the bond market for an impartial evaluation. The market rejected the debt.

crisis and its implications for municipal borrowing and the stability of the banking system generally, generated little sympathy for federal assistance.<sup>31</sup> An October lobbying effort by Governor Carey only produced the famous Daily News headline: "Ford to City: Drop Dead." But the economic realities of the New York crisis were being felt. While federal assistance helping New York banks and residents might carry negative political implications for national politicians (i.e.,  $\tilde{\theta}_i \leq 0$ ), concerns over significant financial spillovers from the crisis were real and widespread ( $F_i > 0$ ). In August, 1975, Philadelphia (in good financial shape at the time) paid 8.83% to borrow short-term money, an increase of nearly 90 basis points over what he had paid a month earlier. Econometric evidence from the period shows large cities generally faced higher interests because of the New York City crisis; see Smith and Booth (1985) and Browne and Syron (1979). Further, city mayors from both political parties realized the importance of a New York City precedent; if New York City did not get help, it is hard to imagine that any U.S. city would qualify for federal bailout assistance. In November, 1975 Congress approved (by 10 votes in the House) and President Ford signed the Seasonal Financing Act to provide New York City up to \$2.3 billion in relief funding over three years to be paid back at 1 percent above the then federal borrowing rate of 6 percent. If fully used, the Act would give a federal "bailout" worth the difference between the effective 13.2 percent MAC borrowing rate at the time<sup>32</sup> minus the Act's implied rate of 7 percent ( $= .06 + .01$ ) times the size of the relief fund, or about \$142.6 million ( $= (.132 - .07) \cdot \$2.3$  billion). This is a modest federal subsidy, equal to at most 3.5 percent of the City's \$4 billion of accumulated deficits. The implied federal rate of co-payment for New York City's conditional bailout was therefore .965 ( $= \tilde{\theta} = 1 - .035$ ). For New York City's fiscal crisis, Washington kept with its tradition of very limited local bailouts. It is difficult to imagine that any other U.S. city could do much

---

<sup>31</sup> Washington's reaction reflected the national feelings at the time. A Newsweek article of August 4, 1975, quotes a Wall Street municipal bond trader commented that he had "never seen so much delight in my life. . . . The country has long seen New York as arrogant. The attitude is: So now you're in trouble, then help yourself, Big Mouth!"

<sup>32</sup> In October, 1975 MAC bonds paying 9.25 percent were selling at about \$70 per par value (\$100) bond. The implied effective interest rate is therefore .132 ( $= .0925/.7$ ).

better.

When faced with its fiscal crisis in August, 1990, Philadelphia's politicians did not even consider federal relief as a policy option. As in New York City, the initial hope was to cover the projected one year deficit of \$206 million through a patchwork of temporary loans. Short-term loans were forthcoming for FY 1990-91 (priced at an equivalent annual rate of 18.5 percent!), but by June, 1991 it was clear that Philadelphia needed a bailout plan to save its sinking fiscal ship. Since estimates showed that tax increases alone could not close the city's fiscal gap (Inman, 1992), the plan would require additional outside money or immediate and significant spending cuts. In June, 1991, the city got both through a state created borrowing and oversight agency called the Pennsylvania Intergovernmental Cooperation Authority (PICA). The PICA Board consists of five members, two appointed by the Pennsylvania House of Representatives, two appointed by the Pennsylvania Senate, and one by the Governor. No city appointed representative was on the Board. Guaranteed a dedicated share of the city's wage tax revenues, PICA was able to borrow \$450 million for 10 years at 7.5 percent; \$206 million of the loan was used to refund the city's short term deficit, saving the city approximately 11 percent ( $= .185 - .075$ ) in annual interest expenses. PICA also proved instrumental in the city's efforts to cut its spending. As long as PICA loans are outstanding, all city budgets must be balanced using GAAP accounting and formally approved by the Board. If the Board does not approve the budget, then it can withhold state aid; in FY 1992 this assistance accounted for 23 percent of city planned expenditures. With the PICA threat of no state aid hanging in the background, the city was able to negotiate new labor contracts giving city workers a 0 percent nominal pay increase for the fiscal years 1993-1995. The city has now enjoyed three straight years of balanced budgets, with FY 1999 showing a positive fiscal balance of \$141.2 million. The total conditional bailout needed to restore Philadelphia to fiscal stability was at most the cost of the interest subsidy made available by the PICA loans, or roughly 11 percent of the original deficit ( $= (.185 - .075) \cdot \$200 \text{ million} / \$200 \text{ million}$ ).<sup>33</sup> For at least one

---

<sup>33</sup> Orange County, CA, the other major default of the past ten years, did no better from its efforts to

important state structured conditional bailout, the rate of co-payment ( $\hat{\epsilon} = 1 - .11 = .89$ ) follows the U.S. historical tradition. With such high rates of co-payment to cover past unfunded deficits, we can be confident that the incentives of U.S. local governments to run excessive deficits are being held in check.

#### IV. Conclusion

"None of us here can remember what happened a hundred years ago. That is one reason why progress in municipal finance is so difficult. Our cities go on for century after century, but the citizens who have to administer them, and the other citizens who buy their bonds, change from generation to generation. . . . Consequently, the cities themselves and the successive generations of bondholders are prone to go on doing the same old thing over again once or twice in every century." Philip Cornick, *Municipal Finance*, August, 1933 (as quoted in Hillhouse (1936), p. 1).

When set against the analytic framework of Section II, the U.S. historical record provides a clearer understanding of what fiscal institutions are needed to ensure responsible budgeting by local governments in a federalist public economy. On most dimensions, the U.S. performance has been a success. Most local governments live within their means. Widespread fiscal crises, when they occur, depend on unique and generally rare events: exogenously stimulated public capital expansions followed by deep and prolonged recessions in 1840's and 1930's or a breakdown in local government in 1870's. In each case, the Federal government either said NO to local bailouts (1840's and 1870's) or provided only very modest relief sufficient to discourage future excessive borrowings by the local sector. In each case too, strong presidents and/or strong national political parties were crucial in these decisions to limit local relief. This tradition of refusing to provide significant national fiscal relief to governments in distress

---

secure a sizeable state bailout. State Senator Killea who proposed the state legislation for the managing the Orange County crisis made the state's position very clear: "I do not support a (state) bailout. This measure would say, Default is not an option. It says to Orange County, if you don't fix the problem yourself, the state will be forced to fix for you, using your resources, perhaps your property taxes, perhaps worse cuts, perhaps other fees you won't like, possibly all of the above, but we will not allow you to walk away from your obligations because of the tremendous effect on everybody else in the state." As quoted in Baldassare (1998, p. 163).

continues to this day. Among contemporary defaults, only New York City has received any federal assistance and the subsidy was limited to a loan guarantee coupled with significant fiscal oversight by an outside agency. Other state governments offering assistance have followed this model of very modest conditional bailouts with strong oversight.

The net effect of a political economy of no, or limited conditional, bailouts has been to shift responsibility for balancing the budget to where it belongs: to the market for local government debt as a contract between taxpayers and lenders. With responsibility so assigned, each participant has done what it needs to do to make the market work. Lenders have worked hard to uncover the underlying risks of municipal credits -- even when the lender is in Europe and the year is 1840 -- while cities and states have adopted various means -- GAAP accounting, BBR's with judicial enforcement, and outsider credit ratings -- to signal their credit worthiness. Finally, if a municipal default does occur, the U.S. has in place a bankruptcy code which can achieve orderly financial workouts.

Still, there are weaknesses in the U.S. institutional armor to protect the principle of a hard budget constraint. First, the assignment of taxing responsibilities in the U.S. gives state and local governments the rights to tax non-residents; the results are inefficient local budgets and inefficient locations for private capital. Second, decentralized congressional politics -- politics without strong presidents or parties -- encourages inefficient federal government spending on state and local government services. Again, there is too much local spending. Finally, while national politics has proven effective in saying NO to requests to bailout excessive local debt, saying NO is not a given. Bailouts may well occur if there is widespread demand for deficit assistance (e.g., following a deep recession) at a time when national politics are dominated by a decentralized legislature (e.g., today). Absent the first line of defense of strong fiscal leadership committed to efficiency, a constitutionally specified system for conditional bailouts enforced through an independent "bankruptcy" court or agency will be needed. The U.S. federal system now lacks this second line of protection. Each weakness above presents an opportunity for fiscal reform.

## REFERENCES

- Ades, A. and E. Glaeser (1995), "Trade and Circuses: Explaining Urban Giants," *Quarterly Journal of Economics*, Vol. 110, pp. 195-227.
- Aghion, P. and P. Bolton (1990), "Government Domestic Debt and Risk of Default: A Political-Economic Model of the Strategic Role of Debt," in R. Dornbusch and M. Draghi (eds.), *Public Debt Management: Theory and Practice*, Cambridge: Cambridge University Press.
- Arnold, R. D. (1979), *Congress and the Bureaucracy*, New Haven: Yale University Press.
- Auerbach, A. J., L. J. Kotlikoff, and W. Leibfritz (1999), *Generational Accounting Around the World*, Chicago: University of Chicago Press.
- Baldassare, M. (1998), *When Government Fails: The Orange County Bankruptcy*, Berkeley: University of California Press.
- Bayoumi, T., Goldstein, M., and G. Woglom (1995), "Do Credit Markets Discipline Sovereign Borrowers? Evidence from the U.S. States," *Journal of Money, Credit, and Banking*, Vol. 27, pp. 1046-1059.
- Boadway, R. and F. Flatters (1992), "Efficiency and Equalization Payments in a Federal System of Government: A Synthesis and Extension of Recent Results," *Canadian Journal of Economics*, Vol. 15, pp. 613-633.
- Bohn, H. and R.P. Inman (1996), "Balanced Budget Rules and Public Deficits: Evidence from the U.S. States," *Carnegie-Rochester Conference Series on Public Policy*, Vol. 45, pp. 13-76.
- Bolton, P. and Scharfstein (1998), "Corporate Finance, the Theory of the Firm, and Organizations," *Journal of Economic Perspectives*, Vol. 12, pp. 95-114.

- Bridgeport, City of (1991), "Voluntary Petition, in Proceedings for Adjustment of Debts of a Municipality Under Chapter 9," U.S. Bankruptcy Court, District of Connecticut.
- Coate, S. (1995), "Altruism, the Samaritan's Dilemma, and Government Transfer Policy," *American Economic Review*, Vol. 85, pp. 46-57.
- DelRossi, A. and R. P. Inman (1999), "Changing the Price of Pork: The Impact of Local Cost Sharing on Legislators' Demands for Distributive Public Goods," *Journal of Public Economics*, Vol. 71, pp. 247-273.
- Dewatripont, M. and E. Maskin (1995), "Credit and Efficiency in Centralized and Decentralized Economies," *Review of Economic Studies*, Vol. 62, pp. 841-855.
- Dillinger, W. and S. Webb (1998), "Fiscal Management in Federal Democracies: Argentina and Brazil," Mimeo., World Bank.
- English, W. (1996), "Understanding the Costs of Sovereign Default: American State Debts in the 1840's," *The American Economic Review*, Vol. 86, pp. 259-275.
- Epple, D. and C. Spatt (1986), "State Restrictions on Local Debt: Their Role in Preventing Default," *Journal of Public Economics*, Vol. 29, pp. 199-221.
- Fitts, M. and R. P. Inman (1992), "Controlling Congress: Presidential Influence in Domestic Fiscal Policy," *Georgetown Law Journal*, Vol. 80, pp. 1737-1785.
- Hillhouse, A. M. (1936), *Municipal Bonds: A Century of Experience*, New York: Prentice-Hall, Inc..
- Hempel, G. (1971), *The Postwar Quality of State and Local Debt*, New York: Columbia University Press.
- Inman, R. P. (1982), "Public Employee Pensions and the Local Labor Budget," *Journal of Public Economics*, Vol. 19, pp. 49-71.
- Inman, R. P. (1983), "Anatomy of a Fiscal Crisis," *Business Review: Federal Reserve Bank of Philadelphia*, Sept.-Oct., pp. 15-22.
- Inman, R. P. (1988), "Federal Assistance and Local Services in the United States: The Evolution of a New Federalist Fiscal Order," in H. Rosen (ed.), *Fiscal Federalism: Quantitative Studies*, Chicago: University of Chicago Press, pp. 33-75.
- Inman, R. P. (1992), "Can Philadelphia Escape Its Fiscal Crisis with Another Tax Increase?" *Business Review of the Federal Reserve Bank of Philadelphia*, September-October, pp. 5-20.

- Inman, R. P. (1997), "Do Balanced Budget Rules Work? U.S. Experience and Possible Lessons for the EMU," in Horst Siebert (ed.), *Quo Vadis Europe?*, Tübingen: J.C.B. Mohr (Paul Siebeck), pp. 309-332.
- Inman, R. P. (1999), "On the Design of Intergovernmental Transfers with An Application to the New South Africa," in R. Schwab (ed.), *Essays in Honor of Wallace Oates*, London: Edgar Elgar.
- Inman, R. P. and D. L. Rubinfeld (1996), "Designing Tax Policy in Federalist Economies: An Overview," *Journal of Public Economics*, Vol. 60, pp. 307-334.
- Inman, R. P. and D. L. Rubinfeld (1997), "Making Sense of the Antitrust State-Action Doctrine: Balancing Political Participation and Economic Efficiency in Regulatory Federalism," *Texas Law Review*, Vol. 75, pp. 1203-1299.
- Jaffee, D. and T. Russell, "Imperfect Information, Uncertainty, and Credit Rationing," *Quarterly Journal of Economics*, Vol. 90, pp. 651-666.
- Kolstad, C. and F. Wolak (1983), "Competition in Interregional Taxation: The Case of Western Coal," *Journal of Political Economy*, Vol. 91, pp. 443-360.
- Kornai, J. (1986), "The Soft Budget Constraint," *Kyklos*, Vol. 39, pp. 3-30.
- Ladd, H. (1975), "Local Education Expenditures, Fiscal Capacity, and the Composition of the Property Tax Base," *National Tax Journal*, Vol. 28, pp. 145-158.
- Lewis, C. W. (1994), "Municipal Bankruptcy and the States: Authorization to File Under Chapter 9," *Urban Affairs Quarterly*, 30, pp. 3-26.
- McGrane, R. (1935), *Foreign Bondholders and American State Debts*, New York: The MacMillan Company.
- O'Connell, M. and R. C. Picker (1933), "When Cities Go Broke: A Conceptual Introduction to Municipal Bankruptcy," *The University of Chicago Law Review*, 60, pp. 425-496.
- Pauly, M. (1970), "Optimality, Public Goods, and Local Governments: A General Theoretical Analysis," *Journal of Public Economics*, Vol. 78, pp. 572-584.
- Ratchford, B. U. (1941), *American State Debts*, Durham, NC: Duke University Press.
- Schlesinger, A. M. (1945), *The Age of Jackson*, Boston: Little, Brown and Co..
- Scott, W. A. (1893), *The Repudiation of State Debts: A Study in the Financial History*, Boston: T. Y. Crowell and Co.

Stewart, C. (1989), *Budget Reform Politics: The Design of the Appropriations Process in the House of Representatives, 1865-1921*, Cambridge: Cambridge University Press.

Wallis, J., A. Grinath, and R. Sylla (1998), "Debt, Default, and Revenue Structure: Public Lands, Property Taxes, and the Debt Crisis in Indiana and the North in 1841," Mimeo., University of Maryland, Department of Economics.

Wittman, D. (1989), "Why Democracies Produce Efficient Results," *Journal of Political Economy*, Vol. 97, pp. 1395-424.

Weingast, B. (1995), "The Economic Role of Political Institutions: Market-Preserving Federalism and Economic Development," *Journal of Law, Economics, and Organization*, Vol. 11, pp. 1-31.

Wildasin, D. (1989), "Interjurisdictional Capital Mobility: Fiscal Externality and a Corrective Subsidy," *Journal of Urban Economics*, Vol. 25, pp. 193-212.

Wilson, J. (1999), "Theories of Tax Competition," *National Tax Journal*, Vol. 52, pp. 269-304.

## APPENDIX

### Building a Reputation for Fiscal Discipline: Saying "No" to Bailouts

The analysis of Section II argues that even an institutionally strong central government capable of resisting legislative pressure for local fiscal transfers (Exhibit I) may be susceptible to pressure from individual local governments for "bailout" relief from accumulated local deficits (Exhibit II). When confronted with a request for a fiscal bailout, the central government will resist the temptation to provide relief when the present value cost to the central government of the bailout ( $C_{\hat{a}i}^c$ ) is greater than or equal to the present value costs of not bailing out the local government ( $C_{\zeta i}^c$ ). The present value costs to the central government of a local government bailout equals the local deficit:  $C_{\hat{a}i}^c = \text{area}_i[B + C + D]$  in Figure 1 above and denoted hereafter as the deficit  $\ddot{A}_i$ , or  $C_{\hat{a}i}^c = \ddot{A}_i$ . This defaulted deficit is paid by national taxpayers, including residents of the defaulting community; the central government is assumed to represent the economic interests of these national taxpayers. The present value costs to the central government of not bailing out the local government equals the sum of all financial ( $F_i$ ) and distributional spillovers ( $V_i$ ) imposed on national taxpayers by the locally defaulted debt:  $C_{\zeta i}^c = F_i + V_i$ . Financial spillovers ( $F_i$ ) are the allocative consequences of default and reflect both the capital market misallocations caused by higher interest rates and any labor, capital, or product market inefficiencies due to macro-economic disruptions following a local default. The level of financial spillovers are assumed to be proportional to the level of the local deficit left in default:  $F_i = \varnothing_i \cdot \ddot{A}_i \cdot \hat{\delta}$ , where  $\varnothing_i$  is the allocative loss associated with each dollar of locally defaulted debt and  $\hat{\delta}$  is the percent of the original deficit left unpaid and thus in default. The share of local debt unpaid,  $\hat{\delta}$ , is set exogenously by a national "municipal bankruptcy court" and is assumed to be known by both local and national governments. Distributional spillovers ( $V_i$ ) measure the distributional consequences of the local default and are also assumed to be proportional to the aggregate level of the local deficit:  $V_i = (1 + \nu_i) \cdot \ddot{A}_i$ , where  $\nu_i$  is the weighted average additional distributional cost of \$1 of the deficit burden borne by bondholders ( $\hat{\delta}$ ) and local taxpayers ( $1 - \hat{\delta}$ ) with  $\nu_i = \hat{\delta} \cdot \nu_i^{\text{bond}} + (1 - \hat{\delta}) \cdot \nu_i^{\text{tax}}$ . The distributional cost of a dollar of local deficit may be greater than, equal to, or less than \$1 as the central government values the "weighted average" local taxpayer/bondholder relatively more ( $\nu_i > 0$ ), the same as ( $\nu_i = 0$ ), or less ( $\nu_i < 0$ ) than the average national taxpayer. The costs  $C_{\hat{a}i}^c$  and  $C_{\zeta i}^c$  are unique to each local government  $i$ . There will be no local bailout when  $C_{\hat{a}i}^c \geq C_{\zeta i}^c$ ; there will be a local bailout when  $C_{\hat{a}i}^c < C_{\zeta i}^c$ .

A comparison of the costs of bailout to the costs of no bailout reveals that the central government will be *accommodating* and pay a local government bailout whenever:

$$C_{\hat{a}i}^c = \ddot{A}_i < (1 + \nu_i + \varnothing_i \cdot \hat{\delta}) \cdot \ddot{A}_i = C_{\zeta i}^c,$$

or when  $\nu_i + \varnothing_i \cdot \hat{\delta} > 0$ , that is, when the combined financial and distributional spillovers from default are positive. Alternatively, the central government will be *tough* and not pay a local government bailout whenever:

$$C_{\hat{a}i}^c = \ddot{A}_i \geq (1 + \nu_i + \varnothing_i \cdot \hat{\delta}) \cdot \ddot{A}_i = C_{\zeta i}^c,$$

or when combined financial and distributional spillovers from default are either negative or zero:  $v_i + \varnothing_i \cdot \delta \leq 0$ . The combined spillovers from default will be negative, and the central government will be *tough*, whenever financial spillovers are small or zero and the central government values a dollar to national taxpayers relatively more highly than a dollar paid to local taxpayers and/or local bondholders so that  $v_i \leq -\varnothing_i \cdot \delta$ .<sup>34</sup>

If these costs to the central government of bailouts or no bailouts are known by local governments at the time of their decision to adopt a local deficit, local governments will then know with certainty whether the central government will be *tough* or *accommodating*. If the central government is known to be *tough* -- i.e.,  $C_{\hat{a}i}^c \geq C_{\varnothing i}^c$  or  $v_i \leq -\varnothing_i \cdot \delta$  -- it will be rational for the local government to run a balanced budget; see Exhibit II. Alternatively, if the central government is known to be *accommodating* -- i.e.,  $C_{\hat{a}i}^c < C_{\varnothing i}^c$  or  $v_i > -\varnothing_i \cdot \delta$  -- then the rational choice for the local government will be to run a deficit and seek a bailout; again, see Exhibit II. With known costs, these conclusions hold whether the deficit-bailout game is played just once or played year after year. A central government known to be accommodating to local governments of type  $i$  will therefore subsidize all such local governments who run a deficit; knowing they will be subsidized, all local governments of type  $i$  will run deficits.

The consequence of having an accommodating central government will be an economically inefficient local public sector, one which uses nationally subsidized local deficits to over-provide local public services; see Exhibit II. Unless a binding contract can be written between the two branches of government which ensures a balanced local budget -- a "balanced budget rule" enforced, for example, by an independent court -- the two branches of government will be locked into this inevitable inefficiency.<sup>35</sup> Given the sequential nature of local budgeting, or equivalently, the inability of the central government to commit to a no-bailout policy, local governments will seek the bailout and the national government will pay it so as to avoid the financial and distributional spillovers of local defaults. When the national costs of allowing local defaults are large because of large financial and/or distributional spillovers and these costs are known to local governments, then an inefficient local public sector will result.

This inefficiency can be avoided by structuring the private and public financial systems so as to minimize financial and distributional spillovers of local defaults; see at pp. xx-xx, Main Text.

---

<sup>34</sup> It is not difficult to add one additional further cost to the analysis: the relative inefficiency cost of using central government taxation to fund the local bailout. Measuring this cost at  $\hat{a}$ /dollar of local bailout  $C_{\hat{a}i}^c$  then equals  $= \hat{A}_i \cdot (1 + \hat{a})$ . With this added cost to bailouts, the central government will be *tough* when  $v_i + \varnothing_i \cdot \delta_i \leq \hat{a}$  or when  $v_i \leq \hat{a} - \varnothing_i \cdot \delta_i$ , logically a less demanding standard for saying *no* to local bailouts. See also footnote 7, below.

<sup>35</sup> The key difficulty is to ensure that the balanced budget contract is an enforceable one. Epple and Spatt (1986) design a balanced budget rule which is enforced by a majority of all local governments. In their model local deficits arise for exogenous reasons, but enforcement is an endogenous choice. Alternatively, Inman (1997) presents a model where deficits are endogenous but enforcement is by an exogenous, constitutionally bound supreme court. Bohn and Inman (1996) present evidence that balanced budget rules can work if appropriate enforcement rules are in place.

Surprisingly, perhaps, allowing a small amount of uncertainty on the part of local governments about central government costs, and thus motivations, can also work to deter inefficient local deficits and central government bailouts. With or without uncertainty, tough central governments, those for whom  $v_i \leq -\delta_i \cdot \delta$ , will always deny bailouts. However, uncertainty about costs permits a truly accommodating central government, one for whom  $v_i > -\delta_i \cdot \delta$ , to adopt a no-bailout behavior and to fool local governments into believing it too is a truly tough central government. Such behaviors are costly to a truly accommodating central government, however; in any one fiscal period, it would rather accommodate. Acting tough when you want to accommodate must therefore provide a compensating benefit; the benefit comes from discouraging default behavior and thereby saving bailout costs in future budget periods. With uncertainty about costs, the truly accommodating central government may find it advantageous to act as if it were a tough central government -- that is, to deny bailouts -- provided there are enough future budget periods of discouraged bailouts to justify the short-run costs of acting against their true economic incentives. Thus, cost uncertainty plus an on-going budget relationship with local governments allows a truly accommodating central government to build a credible reputation as a tough central government. Bailouts will then be discouraged, and local fiscal efficiency will result.

This intuition about the role central government fiscal reputations as a means to deter local deficits can be made precise within the framework of the Fudenberg-Kreps-Wilson (1982, 1986; hereafter FKW) answer to Selten's (1978) chain-store paradox. The deficit-bailout game described here and in Exhibit II is isomorphic to the entry-deterrence game which lies behind the chain-store paradox studied by FKW. In that game, a new entrant into a market of a dominant chain store enters ("deficit") when it knows the dominant firm will accommodate -- i.e, fighting ("no bailout") is more costly than acquiescing ("bailout") -- and will not enter when it knows the dominant firm will be tough -- i.e., fighting ("no bailout") is as costly or less costly than not fighting ("bailout"). FKW show that with even a small amount of uncertainty about the true nature of the dominant firm -- tough or accommodating -- it is possible for a truly accommodating dominant firm to act tough, deter entry, and make higher profits in the long-run. This appendix applies the FKW argument to the deficit-bailout game outlined here. We will find that, like the accommodating firm facing entrants, a truly accommodating central government facing the threat of local deficits can credibly signal they are tough by denying bailouts and through that action deter inefficient local government fiscal behaviors.<sup>36</sup>

The structure of the deficit-bailout game is as follows: In each budget period (denoted by a fiscal year  $t$ ) local government(s) of type  $i$  moves first and makes a decision to run, or not run, a deficit of size  $\bar{A}_i$  and to then ask for a central government bailout sufficient to cover the costs of that deficit. If there is a local request for a bailout, the central government then decides to grant the bailout and pay  $\bar{A}_i$  or to deny the bailout and pay nothing, leaving the local government with the responsibility to fund the

---

<sup>36</sup> The argument developed here can be seen as a contribution to the growing literature on controlling inefficient behaviors in sequential relationships. Dewatripont and Maskin (1995), Segal (1998), and Qian and Roland (1998) each show the importance of market competition as a means to ensure commitment to efficient policies; with competition it is easier for the central government (Segal and Qian and Roland) or a central bank (Dewatripont and Maskin) to say *no* to relief for any single inefficient firm. Schaffer (1989) studies the role of reputation as a constraint on inefficient transfers to state-owned enterprises; as here, Schaffer's analysis is an application of the FKW framework.

deficit on its own from future local taxes, whose present value cost will equal to  $\bar{A}_i$ .<sup>37</sup> The game is played separately between the central government and each local government(s)  $i$  in each period  $t$ . There may be many government types ( $i = 1 \dots G$ ). Most importantly, there are many budget periods numbered from today ( $t = T$ ) to the end of the central government's term in office ( $t = 1$ ), where  $t$  measures the number of years left to the end of term. Further, in this specification local governments of type  $i$  learn nothing useful about the central government's true motivations towards local governments like themselves (tough or accommodating) from watching how the central government treats other local governments of another type  $j$ .<sup>38</sup> Finally, since the central government will behave identically towards all local governments of a given type, and since all local governments of a given type behave identically, then all local governments of a given type can be treated as a single local government, perhaps called the "urban center," the "middle class suburb," or the "rural locality."

In each budget period, the central government must decide to allocate resources on behalf of all national taxpayers to bailout, or not bailout, troubled local governments. The central government only observes that the local government has a deficit and has requested a bailout; it does not know the cause of that deficit.<sup>39</sup> If the central government pays the bailout it costs the average national taxpayer  $-\tilde{\pi}_i \bar{A}_i$ , where  $\tilde{\pi}_i$  is the percent of national taxpayers residing in local government  $i$  and  $\bar{A}_i$  is the level of deficit per local resident.<sup>40</sup> If the central government does not pay the bailout then the average national

---

<sup>37</sup> The structure of the model, namely constant marginal costs and benefits to deficits and bailouts, will ensure that local governments who choose to borrow will want to borrow to the maximum level of debt possible, and that central governments who choose to offer bailouts will pay the full costs of the deficit. Extensions of the model to allow for variable debt levels -- chosen strategically -- and variable bailouts -- also chosen strategically -- are possible, but become cumbersome and obscure the main points of this first analysis.

<sup>38</sup> The key source of uncertainty in the model will be how the central government values a dollar of each bailout transfer to a local government of type  $i$ , denoted above as  $\tilde{\pi}_i$ . The specification here assumes that this distributional parameter is unique to each type of local government and that knowing  $\tilde{\pi}_j$  tells local governments nothing useful about  $\tilde{\pi}_i$ . One could imagine a model where information about  $\tilde{\pi}_j$  could be informative as to the value of  $\tilde{\pi}_i$ , for example, where the central government's distributional weight is a function of attributes of the residents of each locality. In this case,  $\tilde{\pi} = \hat{\mathbf{a}} \cdot \mathbf{X} + \hat{a}$ , where  $\mathbf{X}$  is a vector of community attributes and  $\hat{\mathbf{a}}$  is a vector of common parameters and  $\hat{a}$  is a common measure of uncertainty. Then  $\tilde{\pi}_i = \hat{\mathbf{a}} \cdot \mathbf{X}_i + \hat{a}$  and  $\tilde{\pi}_j = \hat{\mathbf{a}} \cdot \mathbf{X}_j + \hat{a}$ , and observing how the central government treats all other local governments would allow governments of type  $i$  to infer  $\hat{\mathbf{a}}$  and  $\hat{a}$  and to update those inferences with additional observations of central government behaviors. This would be an interesting extension to the analysis. Here, however, I assume  $\hat{\mathbf{a}}$  and/or  $\hat{a}$  are unique to each type of local government -- that is,  $\hat{\mathbf{a}}_i$  and  $\hat{a}_i$ .

<sup>39</sup> This point is not crucial to the argument which follows, but it adds a measure of realism to the analysis. I will be assuming below that local governments run deficits for either of two reasons. First, deficits may be chosen as a strategic move in the bailout game. Second, deficits may be a necessary response of an initially well intentioned local government which first adopts the efficient (no deficit) budget but because of an adverse economic shock it must borrow and spend. Allowing an exogenous cause to local deficits is analogous to allowing exogenous entry in the analysis of FKW. The consequence is to make reputation-building more costly to the central government.

<sup>40</sup> It is possible to add a measure of the relative inefficiency cost of using federal taxation to fund a

taxpayer suffers financial and distribution spillovers from this no bailout decision of  $-\tilde{n}_i(1 + v_i + \varnothing_i \cdot \delta) \cdot \tilde{A}_i$ . If the local government does not run a deficit and does not ask for a bailout, national taxpayers are unaffected and bear a cost of 0. Normalizing by  $\tilde{A}_i$ , pay-offs for the central government in any single budget period are:<sup>41</sup>

Central Government Pay-offs Per Dollar of Local Deficit

No Local Deficit/No Bailout:	0
Local Deficit/No Bailout:	$-\tilde{n}_i(1 + v_i + \varnothing_i \cdot \delta)$
Local Deficit/Bailout:	$-\tilde{n}_i$ .

Clearly having local governments choose the no deficit budget is the preferred outcome for the central government. However, when faced with a deficit/bailout request in any isolated budget period, the central government will wish to offer the bailout and be accommodating if cost of the bailout is less than the cost of no bailout; from the payoffs above the central government wishes to be *accommodating* when  $-\tilde{n}_i > -\tilde{n}_i(1 + v_i + \varnothing_i \cdot \delta)$  or when  $v_i > -\varnothing_i \cdot \delta$ . Conversely, if the costs of bailout are greater than or equal to the costs of no bailout then the central government will deny the bailout; the central government will be *tough* when  $-\tilde{n}_i \leq -\tilde{n}_i(1 + v_i + \varnothing_i \cdot \delta)$  or when  $v_i \leq -\varnothing_i \cdot \delta$ .

When these pay-offs are known by local governments with certainty, the local government can make its deficit decision without fear of error and choose deficits when the central government is accommodating and choose balanced budgets when the central government is tough. As we shall see, however, uncertainty about whether the central government really is tough or accommodating may affect this choice. The most plausible source of this uncertainty is how the central government values dollars paid from the national taxpayer to local taxpayers or their creditors: What is the value of  $\tilde{\varnothing}_i$ ? Does the central government favor local taxpayers/bondholders so that  $\tilde{\varnothing}_i > 0$ ? If so, local governments will be bailed out, even when financial spillovers are negligible, perhaps even zero:  $v_i > 0 \geq -\varnothing_i \cdot \delta$ . Are local taxpayers/bondholders in political disfavor so that  $\tilde{\varnothing}_i < 0$ ? If so, and  $\tilde{\varnothing}_i$  is sufficiently negative to offset any costs of financial spillovers, then  $v_i \leq -\varnothing_i \cdot \delta$  and no bailout will be paid. In the analysis which follows, I assume that  $\varnothing_i$  and  $\delta$  are known and common knowledge but that the central government's  $\tilde{\varnothing}_i$  is unknown to local governments but described by a stable, common knowledge probability distribution such that there is a positive probability that  $\tilde{\varnothing}_i \leq -\varnothing_i \cdot \delta$ . This probability is denoted as  $p_i^\circ$  and represents the likelihood that the current central government will be tough with local governments of

---

dollar of a local bailout so that the cost of the bailout becomes  $-\tilde{n}_i \cdot \tilde{A}_i \cdot (1 + \hat{\alpha})$ ; see Appendix, footnote 1. This extensions will raise the cost of bailout and makes reputation-building more attractive.

<sup>41</sup> The analysis which follows will use these normalized pay-offs per dollar of local deficits. I am implicitly assuming that the deficits are "small" relative to the national treasury -- thus bailout costs do not increase with  $\tilde{A}_i$  -- and are also "small" relative to the national economy -- thus no bailout costs do not increase with  $\tilde{A}_i$ . This assumption allows us to focus the analysis on the simpler (1,0) strategic decisions of deficit/no deficit and bailout/no bailout without having to also specify the strategically optimal level of deficits and bailouts. Making deficits and bailouts endogenous would a useful extension.

type  $i$  in any budget period.<sup>42</sup>

Given this uncertainty about the central government's motivation, how will local governments of type  $i$  set their local deficit? If a local government does not use deficit financing then it will earn a consumer surplus for its citizens from its current accounts budget equal to area  $[A]_i$  in Figure 1; see Main Text. If the local government deficit finances its current budget and there is no bailout then the local government must cover the costs of its share  $(1 - \delta)$  of the budget deficit from its own tax revenues. In this case, the citizens net gain will be the fiscal surplus from the deficit budget equal to area  $[A + B + C]_i$  minus the taxpayers' share of the deficit equal to  $(1 - \delta)$ -area  $[B + C + D]_i$ , or area  $[A]_i + \delta$ -area  $[B + C]_i - (1 - \delta)$ -area  $[D]_i$ ; see Figure 1. Finally, if the local government runs a deficit, asks for a bailout, and the bailout is paid, then citizens in community earn a consumer surplus equal to area  $[A + B + C]_i$ ; again, see Figure 1. Dividing each of these pay-offs by the level of the local deficit  $\hat{A}_i$  equal to area  $[B + C + D]_i$ , gives the following vector of pay-offs per dollar of deficit for local governments:<sup>43</sup>

#### Local Government Pay-offs Per Dollar of Local Deficit

No Local Deficit/No Bailout:	$a_i$
Local Deficit/No Bailout:	$a_i + \delta[b + c]_i - (1 - \delta)d_i = a_i - \hat{a}_i$
Local Deficit/Bailout:	$a_i + b_i + c_i = a_i + \hat{a}_i$ ,

where  $\hat{a}_i (= (1 - \delta)d_i - \delta(b + c)_i)$  measures the normalized net cost of deficit financing without a bailout and  $\hat{a}_i (= b_i + c_i)$  measures the normalized net gain of deficit financing with a bailout. To avoid having local governments always prefer deficit financing, local deficits cannot always create positive net benefits. Thus,  $\hat{a}_i \geq 0$ , or equivalently,  $d_i \geq \delta$ , where  $d_i$  is the average rate of inefficiency per dollar of local deficits. If a municipal bankruptcy law sets the share of the local deficit not repaid to bondholders at too high a threshold -- in particular, if  $\delta > d_i$  -- then local governments of type  $i$  will have an

---

<sup>42</sup> Note that if there is a relative inefficiency to paying bailouts from the national treasury ( $= \hat{a}$ /dollar of bailout paid) and this inefficiency is common knowledge, then value of  $p_i^\circ$  will rise since now  $\tilde{\delta}_i \leq \hat{a} - \delta_i \cdot \delta_i$  becomes the no bailout requirement. Note that now  $\tilde{\delta}_i$  can even be positive -- the central government can now value local taxpayers/bondholders -- but if the relative excess burden of national taxation is large enough, still no bailouts will be paid.

<sup>43</sup> This normalization by a constant local deficit assumes the local deficit has only one value through each of the  $T$  periods of the reputation game. As a general rule this will not be true, since the preferred local deficit will depend on the local government's perception that the central government is tough or accommodating. As the analysis below shows, the probability that the central government is tough declines as tenure of the central government shortens (as  $t$  declines). Generally then, we should expect local deficits to increase over time since the chance of bailout rises. This extension is certainly possible and gives rise to a theory of endogenous local deficits, but it significantly complicates this first analysis of the role of reputation-building. For this paper, I assume the local public goods demand curve -- the key determinant of the deficit size -- is such that local governments which choose to run a deficit, do so to its maximum size, shown in Figure 1 (Main Text) as area  $[B + C + D]$ .

unambiguous incentive to deficit finance; reputation-building by the central government will be futile. Hereafter, I assume  $d_i \geq \bar{\delta}$ .

Generally, each local government is assumed to have a choice to run a deficit or not in each fiscal period, but there may be budget years in which the local government must run a deficit because of an exogenous economic or natural disaster. When they occur, such disasters are assumed to be not verifiable to the central government; otherwise a separate insurance program could be specified to cover these losses. Deficits caused by non-verifiable fiscal disasters occur each year for local governments of type  $i$  with a probability of  $q^\circ$ .<sup>44</sup> With a prior probability of  $(1 - q_i^\circ)$ , the local government then chooses to run a deficit or not depending upon its expected pay-off from each fiscal choice. The local government's normalized expected pay-off of not running a deficit will be  $a_i$ . If the local government runs a deficit and the central government is accommodating, then the local government's normalized expected pay-off of running a deficit will be  $(1 - p_i^\circ) \cdot [a_i + \hat{a}_i] + p_i^\circ \cdot [a_i - \hat{a}_i]$ . Balanced budgets will be preferred when  $a_i \geq (1 - p_i^\circ) \cdot [a_i + \hat{a}_i] + p_i^\circ \cdot [a_i - \hat{a}_i]$  or when  $p_i^\circ \geq \hat{a}_i / [\hat{a}_i + \hat{a}_i]$ . Deficits will be preferred when  $p_i^\circ < \hat{a}_i / [\hat{a}_i + \hat{a}_i]$ . Using the definitions of  $\hat{a}_i$  and  $\hat{a}_i$  above,  $\hat{a}_i / [\hat{a}_i + \hat{a}_i] = (1 - d_i) / (1 - \bar{\delta})$ . As  $d_i$  is a measure of the average inefficiency per dollar of local deficit, then  $(1 - d_i)$  is a measure of the net fiscal gain from the deficit strategy, *when it works*. When the net fiscal gain from deficit financing is a large fraction of the total city resources at risk and thus  $\hat{a}_i / [\hat{a}_i + \hat{a}_i] = (1 - d_i) / (1 - \bar{\delta}) > p_i^\circ$ , then deficit financing will be preferred. When the net fiscal gain from the deficit strategy is a relatively small fraction of all resources at risk and  $\hat{a}_i / [\hat{a}_i + \hat{a}_i] = (1 - d_i) / (1 - \bar{\delta}) \leq p_i^\circ$ , then a balanced local budget will be preferred. From Figure 1 (Main Text), steeper, less elastic citizen demand curves for public services will reduce the average inefficiency per dollar of debt, so that  $d_i$  will decline and deficit financing will become a more attractive strategy. Conversely, flatter, more elastic citizen demand curves will increase  $d_i$  and make local government deficit financing less attractive.

An equilibrium to this specification of the deficit-bailout budget game will consist of a fiscal strategy for the central government and for local government  $i$  and a function  $p_t$  based on prior play from period  $T$  to  $t$  which specifies the likelihood that the central government is *tough* such that: 1) the central government's response (bailout or not) is its best response to the local government's strategy; 2) the local government's response (deficit or not) in year  $t$  is its best response to the central government's strategy given that the central government is *tough* with probability  $p_t$ ; 3) the budget game begins with  $p_{iT} = p_i^\circ$  which is then updated based on the central government's strategy using Bayes' rule when possible. The resulting equilibrium is described by the following proposition detailing the four

---

<sup>44</sup> If deficits caused by disasters were distinguishable from strategic deficits, then the central government could establish a separate national disaster relief program with no consequences for its ability to build a reputation as a fiscally *tough* central government. Examples might include a major drop in local economic activity, unexpectedly poor performance of local government investments, or a natural disaster when the federal disaster insurance program is designed to as a stop-gap program to fill the difference between service needs and prior local government savings accumulated as self-insurance. This extension to allow exogenous deficits is not crucial to the central analysis of reputation-building, but it adds an important measure of realism to the model and likely to prove useful in its empirical implementation. The original Kreps-Wilson (1982) analysis of reputation- building sets  $q^\circ = 0$ ; Fudenberg and Kreps (1987) allows  $q^\circ > 0$ .

circumstances under which bailouts may, or may not, occur:<sup>45</sup>

**BAILOUT PROPOSITION:** When the central government faces a local government of type  $i$  for  $T$  budget periods of sequential play, there will be a unique sequential equilibrium outcome described by:

Case (i): If  $v_i \leq -\varnothing_i \cdot \bar{\delta}$  for the central government, then this government is always *tough* towards local governments of type  $i$ . A tough central government will always deny bailouts; the only observed bailout requests will come from local governments suffering an exogenous, non-verifiable fiscal disaster and these requests will be denied.

Case (ii): If  $v_i > -\varnothing_i \cdot \bar{\delta}$  for the central government, then this government will wish to be *accommodating*, offering bailouts if requested. If in this case,

$$q_i^\circ > 1/[1 + (v_i + \varnothing_i \cdot \bar{\delta})],$$

then the accommodating central government will offer a bailout to all local governments of type  $i$  which default. Once a default has occurred and the bailout paid, the central government will have been revealed to be accommodating. Subsequently, all local governments of type  $i$  will run deficits and request bailouts, and those requests will be granted.

Case (iii): If  $v_i > -\varnothing_i \cdot \bar{\delta}$  and the central government is *accommodating*, and if,

$$q_i^\circ \leq 1/[1 + (v_i + \varnothing_i \cdot \bar{\delta})], \text{ but } p_i^\circ \geq \hat{a}_i/[\hat{a}_i + \check{a}_i],$$

then no local governments of type  $i$  will willingly run deficits and seek bailouts. Local governments suffering an exogenous, non-verifiable fiscal disaster may request a bailout, but those requests will be denied.

Case (iv): If  $v_i > -\varnothing_i \cdot \bar{\delta}$  and the central government is *accommodating*, and if,

$$q_i^\circ \leq 1/[1 + (v_i + \varnothing_i \cdot \bar{\delta})], \text{ and now, } p_i^\circ < \hat{a}_i/[\hat{a}_i + \check{a}_i],$$

then the central government will find it optimal to play a mixed strategy when confronted with a request for a bailout, denying the bailout with a probability  $p_i^\circ/(1 - p_i^\circ) \cdot \{ [1 - (\hat{a}_i/[\hat{a}_i + \check{a}_i])^{t-1}] / (\hat{a}_i/[\hat{a}_i + \check{a}_i])^{t-1} \}$  and accommodating the bailout with a complementary probability. The observed probability that a bailout will be denied in period  $t$  will be:

$$p_{it} = p_i^\circ / (\hat{a}_i/[\hat{a}_i + \check{a}_i])^{t-1},$$

which declines as the budget game progresses towards the ending date at  $t = T$ . If a bailout is

---

<sup>45</sup> The proof of this proposition follows directly from the proofs for the entry-deterrence game as presented in Kreps and Wilson (1982) and the overview provided in Fudenberg and Tirole (1992, pp. 369-374). Notes outlining the proof for this deficit-bailout game are available from the author upon request.

requested and granted in any budget year  $t^*$ , then the central government will have been revealed to be accommodating, and in all subsequent fiscal years  $t < t^*$  local governments of type  $i$  will run deficits and requests for bailouts will be granted.

The bailout proposition identifies seven separate aspects of the political economy of central government-local government relations which will have a direct effect on the likelihood of a central government bailout, each of which corresponds to one of the seven parameters of the reputation model:  $q_i^\circ$ ,  $v_i$ ,  $\varnothing_i$ ,  $\delta$ ,  $p_i^\circ$ ,  $(\hat{a}_i/[\hat{a}_i + \ddot{a}_i])$ , and  $t$ . The following comparative static conclusions follow from the behaviors described by the BAILOUT PROPOSITION'S sequential equilibrium:

COMPARATIVE STATICS: Within the sequential equilibrium of the bailout game, the likelihood of a central government fiscal bailout increases with:

- (i) An increase in  $q_i^\circ$  making BAILOUT PROPOSITION'S Case (ii) more likely, where  $q_i^\circ$  measures the likelihood that even a fiscally responsible local government will have to default because of an exogenous adverse economic shock;
- (ii) An increase in  $v_i$  making BAILOUT PROPOSITION'S Case (i) less likely and the central government's bailout response more likely in Cases (ii)-(iv), where  $v_i$  measures the value to the central government of transferring one dollar from national taxpayers to defaulting community  $i$ 's residents or bondholders;
- (iii) An increase in  $\varnothing_i$  making BAILOUT PROPOSITION'S Case (i) less likely and the central government's bailout response more likely in Cases (ii)-(iv), where  $\varnothing_i$  measures the efficiency costs imposed on national taxpayers through financial market spillovers caused by each dollar of defaulted local debt;
- (iv) An increase in  $\delta$  making BAILOUT PROPOSITION'S Case (i) less likely and the central government's bailout response more likely in Cases (ii)-(iv), where  $\delta$  measures the fraction of each dollar of local debt allowed to fall into default by national bankruptcy law;
- (v) A decrease in  $p_i^\circ$  making local default more likely in just those instances -- BAILOUT PROPOSITION'S Cases (iii) and (iv) -- when the central government is more likely to offer bailouts, where  $p_i^\circ$  is local community  $i$ 's initial (period T) perceived likelihood that the central government will reject its request for bailouts (i.e., be *tough*);
- (vi) An increase in  $\hat{a}_i/[\hat{a}_i + \ddot{a}_i]$  making local default more likely in just those instances -- BAILOUT PROPOSITION'S Cases (iii) and (iv) -- when the central government is more likely to offer bailouts, where  $\hat{a}_i/[\hat{a}_i + \ddot{a}_i]$  measures the expected marginal benefit per dollar of local debt to community  $i$ 's residents; and,
- (vii) An decrease in  $t$  reducing the likelihood that central government will choose to deny bailouts in BAILOUT PROPOSITION'S Case (iv) making bailouts appear more likely to the local community, where  $t$  is the number of years remaining before the central government leaves office.

These comparative static results suggest three lines of defense against central government bailouts of local government debt. First, develop efficient fiscal and capital market institutions and use monetary policy to minimize the likelihood of frequent and widespread macro-economic downturns. In this context, efficient fiscal institutions means sufficient tax and spending instruments to redistribute income directly to local community residents, so that on the margin a public dollar to national or community  $i$ 's taxpayers are equally valuable to the central political leadership ( $v_i \geq 0$ ). Efficient fiscal institutions will also assign the significant fraction of the burden of any local default to local taxpayers ( $\delta \geq 0$ ).<sup>46</sup> Efficient capital market institutions will ensure that local deficits are understood by investors so that capital markets can fully assess, and then efficiently price, the likelihood of strategic defaults; if so, then financial market spillovers will be minimized ( $\varphi_i \geq 0$ ).<sup>47</sup> The same information and accounting rules designed to reveal strategic deficits will also prove useful in identifying deficits caused by exogenous economic shocks (e.g., floods). These deficits, if identified as truly exogenous, might reasonably be covered (i.e., "bailed out") by a central government social insurance program of disaster relief. Accounting procedures to distinguish exogenous from endogenous deficits helps to keep  $q^o \geq 0$ . Finally, sound macro-economic management minimizes the likelihood that high deficit, inefficient local governments will be bailed out as part of a general fiscal rescue of the local public sector in times of deep recessions (again,  $q^o \geq 0$ ). Each of these institutional strategies reduces the likelihood that the central government will offer bailouts to cover inefficient local deficits.

A second line of defense seeks to discourage local governments from adopting the deficit-bailout strategy in the first place. Here the election of national candidates committed to fiscal responsibility is essential ( $p_i^o \geq 1$ ).<sup>48</sup> Reducing the fiscal advantage to the local community of running a

---

<sup>46</sup> See, for example, O'Connell and Picker (1993) for a review of current U.S. bankruptcy law setting  $\delta$ . U.S. courts have relied upon state constitutional provisions, state statutes, or the municipal bond contract itself for a definition of  $\delta$ , suggesting that in a full model of bailout behavior  $\delta$  itself should be considered endogenous. As now enforced in U.S. bankruptcy law,  $\delta > 0$  and appears to vary from bankruptcy to bankruptcy with current bondholders bearing significant costs ( $\delta > 0$ ) in the New York City and WPSSS bankruptcies and very low costs in the Philadelphia bankruptcy.

<sup>47</sup> The level of financial market inefficiency created by a dollar of defaulted local debt --  $\varphi_i$  -- is likely to depend on the completeness of the country's financial markets. Inefficiency  $\varphi_i$  is likely to be largest in emerging capital markets where a local government default can lead to the fall of an important bank or lender which in turn leads to a widespread financial and economic collapse; see, for example, Allen and Gale (2000). In more complete financial markets, say those suffering only from problems of asymmetric information in identifying default risk,  $\varphi_i$  will be positive but generally small. Finally, in complete financial markets where investors are informed of each local government's default risk and risks can be diversified away,  $\varphi_i \geq 0$ . In each of the first two cases, plausible specifications of how local defaults lead to market inefficiencies imply that  $\varphi_i = \varphi(\tilde{n}_i)$  where  $\varphi'(\tilde{n}_i) > 0$  when  $\tilde{n}_i$  represents the portion of the defaulting community's population in the national population. Whatever the source of market inefficiency following local government defaults, defaults by large governments are likely to be more inefficient *per dollar of local debt*. If so, the model gives a logical argument for the common proposition that some local governments are "too big to fail."

<sup>48</sup> An alternative strategy is to elect national candidates known to be actively hostile to local communities likely to adopt the deficit strategy or to holders of local government bonds ( $v_i < 0$ ).

deficit, measured here by the expected ratio of fiscal surplus per dollar of debt, is also a valuable strategy for checking inefficient local borrowing ( $\hat{a}_i/[\hat{a}_i + \hat{a}_i] \geq 0$ ). As noted above (p. A-12),  $\hat{a}_i/[\hat{a}_i + \hat{a}_i] = (1 - d_i)/(1 - \delta)$ , where  $d_i$  is a measure of the average inefficiency per dollar of local deficit and  $\delta$  is fraction of community debt shifted onto bondholders. Setting  $\delta \geq 0$  was part of the first line of defense against inefficient bailouts, and that strategy helps here as well. So too will making community  $i$ 's demand curve for public services more elastic, since more elastic demand curves will increase the value of  $d$  and reduce the fiscal surplus earned for local taxpayers from central government bailouts. Community  $i$ 's public goods demand curve will become more elastic when local taxpayers buy a portion of their public services from alternative suppliers, for example, from competitive private firms; fiscal competition helps control bailouts.<sup>49</sup>

As a third and final line of defense, having a central government with a long time horizon -- high values of  $t$  -- ensures reputation building is valuable to the central government and increases the likelihood of a no bailout response to local deficits. All else equal, stable central governments -- whether dictatorial or dominant party democracies -- will discourage inefficient local government deficit behaviors.<sup>50</sup>

#### APPENDIX: REFERENCES

---

Electing such candidates might improve local fiscal responsibility, but it may also have adverse consequences for other values, such as a economic fairness or efficient capital markets. Fiscal responsibility seems the better criterion by which to judge our national candidates.

<sup>49</sup> This conclusion -- that private competition reduces the incentive for public bailouts -- is also a result in Dewatripont and Maskin (1995), Segal (1998), and Qian and Roland (1998). In our analysis, the role of competition is to reduce the advantage of a bailout to local taxpayers since the deficit financed local public good becomes less important economically to local taxpayers; this reduces the local government's incentive to seek a bailout. In the models of Dewatripont and Maskin, Segal, and Qian and Roland competition reduces the importance of the deficit firm (government) to the central government and thus the incentive of the central government to offer bailouts. This latter effect of competition is also found in our reputation model through the level of spillovers per dollar of debt ( $\phi_i$ ), specified as a function of the importance of the defaulting government; see Appendix footnote 14 above.

Finally, while not part of the analysis here, adding a political cost to seeking bailouts in the form of central government fiscal oversight or higher future interest payments because of a damaged fiscal reputation would also deter a local government from adopting inefficient bailouts. Formally, this would be equivalent to extending the model to allow for endogenous partial bailouts.

<sup>50</sup> There are other institutional structures which might be adopted to discourage local deficits or central government bailouts, but each has potentially significant costs in other valued policy goals. One is the adoption of strict balanced budget rules (BBR's) for local governments or, as a partial BBR, minimum taxation. Such rules work (Bohn and Inman, 1996) but they require enforcement by an institution outside the democratic setting studied here (e.g., an independent court; Inman, 1997). Alternatively, one might restrict the central government to use only inefficient taxes; see Appendix footnotes 1 and 7 above. This strategy, however, imposes higher costs on all public activities and should be avoided unless all of government policies -- not just bailouts -- need to be controlled; see Brennan and Buchanan (1980).

- Allen, F. and D. Gale (2000), "Financial Contagion," *Journal of Political Economy*, Vol. 108, 1-33.
- Bohn, H. and R.P. Inman (1996), "Balanced Budget Rules and Public Deficits: Evidence from the U.S. States," *Carnegie-Rochester Conference Series on Public Policy*, Vol. 45, pp. 13-76.
- Brennan, G. and J. Buchanan (1980), *The Power to Tax: Analytical Foundations of a Fiscal Constitution*, Cambridge: Cambridge University Press.
- Dewatripont, M. and E. Maskin (1995), "Credit and Efficiency in Centralized and Decentralized Economies," *Review of Economic Studies*, Vol. 62, pp. 841-855.
- Epple, D. and C. Spatt (1986), "State Restrictions on Local Debt: Their Role in Preventing Default," *Journal of Public Economics*, Vol. 29, pp. 199-221.
- Fudenberg, D. and J. Tirole (1992), *Game Theory*, Cambridge: MIT Press.
- Fudenberg, D. and D. Kreps (1987), "Reputation and Simultaneous Opponents," *Review of Economic Studies*, Vol. 54, pp. 541-568.
- Inman, R. P. (1997), "Do Balanced Budget Rules Work? U.S. Experience and Possible Lessons for the EMU," in Horst Siebert (ed.), *Quo Vadis Europe?*, Tübingen: J.C.B. Mohr (Paul Siebeck), pp. 309-332.
- Kreps, D. and R. Wilson (1982), "Reputation and Imperfect Information," *Journal of Economic Theory*, Vol. 27, pp. 253-279.
- O'Connell, M. and R. C. Picker (1993), "When Cities Go Broke: A Conceptual Introduction to Municipal Bankruptcy," *The University of Chicago Law Review*, 60, pp. 425-496.
- Qian, Y. and G. Roland (1998), "Federalism and the Soft Budget Constraint," *American Economic Review*, Vol. 88, pp. 1143-1162.
- Schaffer, M. (1989), "The Credible-Commitment Problem in the Center-Enterprise Relationship," *Journal of Comparative Economics*, Vol. 13, pp. 359-382.
- Segal, I. (1998), "Monopoly and Soft Budget Constraint," *Rand Journal of Economics*, Vol. 29, pp. 596-609.
- Selten, R. (1978), "The Chain-Store Paradox," *Theory and Decision*, Vol. 9, pp. 127-159.