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Constructing Self-Enforcing Federalism in the Early United States and Modern Russia

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1. Introduction

All federal systems face the *two fundamental dilemmas of federalism*:

> **Dilemma 1:** What prevents the national government from destroying federalism by over-awing its constituent units?
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> **Dilemma 2:** What prevents the constituent units from undermining federalism by free-riding and other forms of failure to cooperate?

These two dilemmas establish a benchmark against which federal systems can be judged. Sustaining a federal system requires *full cooperation* by both the central or national government and by the state or regional governments. To survive, therefore, a federal system must resolve both dilemmas. This requires that the rules defining federalism be *self-enforcing* for political officials at all levels of government, meaning that all officials have an incentive to abide by the rules. A theory of the appearance and survival of federalism must therefore analyze the incentives of political officials to abide by the rules. To be a self-enforcing equilibrium, federalism requires

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a delicate balance between these two dilemmas.

Resolving the two dilemmas is problematic because they imply a *fundamental tradeoff*: solving one dilemma exacerbates the other. Too weak a national government will exhibit free-riding and insulated, "dukedom" economies. Or worse, it will disintegrate. With a national government too strong, federalism typically fails because the national government compromises state independence, extracting rents from the states and hindering interstate competition that underpins the positive economic effects of federalism. Reflecting this tradeoff, several theorists emphasize federalism's instability (Riker 1964, Bednar 1997).

In this paper and elsewhere (de Figueiredo and Weingast 2000), we develop a model of governmentally provided goods under a given set of federal institutions. The analysis illustrates that the two dilemmas operate in opposite directions. The center has to be strong enough to police the states against the common pool incentives emphasized in the literature. If the center is not strong enough to do so, a federal system will fail as the common pool problems will overwhelm the federation. If a federal system centralizes too much, the result will be aggrandizement by the center. The states will either exit altogether, or simply abandon their responsibilities. Too strong a center risks an extractive state with minimal provision of central goods. If a federal system is designed to operate with such a balance, however, it poses an additional problem for the analyst. In particular, such systems exhibit a range of possible equilibria, some with a high degree of productivity, but others with very little.

We apply our analysis to evaluate the success and failure of federalism in the Russia. The central observation about the Russian system is the absence of cooperation between center and regions. The big question is, why? In an important paper, Blanchard and Shleifer (2000) argue that the answer is the Russian central government is too weak. They develop a stylized model that focuses on three features of federations: the share of benefits, and thus strength of the incentives, that states enjoy from economic growth; the degree to which the benefits of office can be diverted by regional officeholders; and the extent to which the center can control the political fates of regional officeholders. In their empirical analysis, they find that the more successful Chinese transition and the less successful Russian transition differ primarily on only one of these three dimensions: the degree of political centralization. Blanchard and Shleifer conclude that the Russian system fails because it provides the center with insufficient power to affect the fate of regional officials. They recommend therefore that the center be given more political and institutional power relative to the regions.

Our approach suggests that this is plausible, but that the lack of cooperation between center and regions may instead reflect an additional problem; namely that the failure of Russian federalism is also in part due to the lack of appropriately defined limits on the central government. This argument reveals a serious flaw in the inference made by Blanchard and Shleifer. Blanchard and Shleifer examine the data and conclude that shirking by the states means the moral hazard and common pool problems overwhelm Russian politics and that therefore that a greater power to intervene is required.

Our model suggests that the Blanchard and Shleifer approach is incomplete. Per the twin dilemmas of federalism, they have characterized half the problem: that associated with the second dilemma. We emphasize in addition that successful federations must address the first dilemma, which Blanchard and Shleifer do not discuss: when the center is too strong, its ability to extract rents increases and the benefits for maintaining participation in the federal bargain disappears. This perspective suggests two additional points to Blanchard and Shleifer's. First, regional non-cooperation in part reflects attempts to resist a potentially dangerous center; and second, that solving the problem of federal cooperation requires not only granting the center the power to police shirking by the regions, but also to cede power to the center in a why that *simultaneously defines a set of credible and self-enforcing limits on federal authority*. Indeed, one of the key lessons from our paper is to develop a point made elsewhere, that we cannot assume that a central government, just as with the states, will act as a welfare maximizer: once embued with power it will also have incentives to deviate from its intended purpose (see, e.g. Buchannan and Brennan 1980; XXX; Litwack 2000).

We provide two types of evidence in favor of our position. First, Blanchard and Shleifer's view suggests that the problems lie principally with the regions and that the center has had the right goals but insufficient power to achieve them. This implies that we should see problems of non-cooperation lie principally with the regions. In contrast, our view suggests that we should observe non-cooperation from both sides. The lack of credible, self-enforcing bounds on the center leads it to undertake some extraction or rent-seeking against the regions.

Russia's transition supports our view over Blanchard and Shleifer's. For example, the center has forced a wide range of expenditures on the regions, largely for reasons of financial expediency and without any regard to standard economic principles of the assignment of policy authority. Second, the center's budget policy, again in part for financial expediency, taxes success. Third, the center has often used draconian methods to force regions to comply with its wishes.

The second type of evidence in support of our position is comparison of Russian federalism with two other federal systems: the United States in the immediate post-Revolutionary period and modern China. There exist remarkable parallels between the problems in modern Russia and those in the United States under the Articles of Confederation (1781-1787) prior to the adoption of the United States Constitution. In parallel with modern Russia, the United States exhibited a series of common pool problems; notably, the absence of adequate national defense, state encroachment on the common market, and the absence of a stable currency. Given these problems, the Federalists proposed three times — in parallel with Blanchard and Shleifer — that the center be given more power to provide national defense and police common pool problems by the states. Each time the Anti-Federalists defeated them, arguing that granting the center power risks abuses by the center. The Federalists finally succeeded the fourth time by proposing a new Constitution that addressed both dilemmas simultaneously: granting more power to the center; but also placing strong and self-enforcing limits on the center's ability to exercise its power.

As with Russia, the current variant of Chinese political institutions were borne out of a highly centralized system–what some have termed "top down" federalism. One of the key features of both the success and failures of Chinese federalism is that power has been *devolved* to regional governments. As Blanchard and Shleifer have argued about Russia, this devolution came at a risk: common pool problems, moral hazard and shirking potentially might have overrun the system. But in the Chinese system, the devolution was accompanied by two things: first, enough retention of central control in order to reduce the severity of such problems, albeit not completely; and second, the development of *credible limits* on the threat of future extraction by the center. This we argue stands in stark contrast to the ultimate result in Russia.

This paper proceeds as follows. In section 2 we lay out a sketch of a repeated compliance model which captures some of these central observations about the nature of federal institutions. We use the model to develop insights into different equilibria which might occur as a function of both exogenous characteristics of the units, both national and state, and the endogenous institutional characteristics. In section 3 we provide several applications of the intuitions provided by the model. In the first two, we begin with early federalism under the Articles of Confederation in the United States, then turn to a discussion of federalism, Chinese Style, in contemporary China. The discussion then turns to problems of federalism in Russia. In section 4, we use the analysis to offer preliminary prescriptions for reforming the Russian federal system. In the final section we conclude..

2. A Theory of Self-Enforcing Federalism

In this section, we sketch a model of self-enforcing federalism.[1] To explain the model of self-enforcing federalism, in which federal institutions are resistant to both peripheralization and centralization, we start by laying out the fundamental characteristics of such a federal system then turning to its implications.

2.1 Assumptions

We model the federal system as a game of *compliance* between a number of states attempting to gain from the provision of goods via a central government. First, following Riker's (1964) definition, a self-enforcing federal system must have the features of *hierarchy*, *autonomy* and *common geographies* and *citizenries*. The first simply implies that the federal government has different levels or the division of authority defined by geography. The second means that

[1]This section draws on de Figueiredo and Weingast (2000a), which develops the formal model sketched here.

each unit of government must have independent jurisdiction over some subset of possible policies. So the national government must have final authority over some areas while the sub-units have autonomy over others. Notice that this definition distinguishes federations from other forms of governance in which hierarchy implies vertical control relationships, such as those explored in organizational economics (see, e.g., Williamson 1985). Thus, the Soviet political system had a hierarchical structure but with only limited policy authority by lower levels of government. Finally, the citizens of each of the subunits have to be citizens of the federal government as well. Note that there are many classically defined national federations which meet this definition including the United States, Australia, and Canada, but also other forms of governance structures including international governments or organizations, such as the European Union.

An additional feature of federal institutions is that, unlike contracts written between private parties in the presence of robust contract law and courts, federal institutions are inherently enforced in an environment of *anarchy*: there are no higher authorities to police the federal bargain. Thus, cooperative outcomes between different units must be *self-enforcing*.

What are the potential outputs a federation can provide? On the one hand, public goods. National defense is a prime example. One of the primary rationales for setting up the federal government of the United States was to provide for a national defense for the thirteen states following the American Revolution. Harmonization of regulations to facilitate trade among the states represents another public good that can be provided by a central government. The range of goods potentially provided by the central government is not limited to classically non-rival, non-excludable public goods, however. In fact, many goods provided by the central government can by private or semi-private goods which are more efficiently provided by a central unit due to *scale and scope economies*. Similarly, there are other types of goods, as have been remarked on by many students of fiscal federalism, which can most appropriately be provided by the states, in which case *heterogeneity* in preferences can create the opportunity for gains from specialization (Tiebout 1956, Oates 1972, Inman and Rubinfeld 1997, Alesina and Wacziarg 1997, Bolton and Roland 1996).

An additional feature of any system of federation is that the actors are *strategic*. In the context of the institutional design of federal systems, this means that not only will the unit(s) creating the federation act strategically but also that *once created*, *all governmental units will pursue self-interested goals*. In the context of bottom-up federalism therefore, this means that if a set of states bands together to capture some gains from cooperation or centralization, and thus enjoins to create a national government, then that national government will have interests of its own, defined by the incentives created within the institutional framework. Similarly, in a top-down federation, in which, because of some exigency or potential gains from decentralization or specialization, a national government sets up autonomous sub-units, those sub-units will also act strategically to maximize their expected utility.

One important question is: what are the incentives created in either of these cases? Here we assume fairly broadly that it is rent maximization. We are specifically vague since we want to capture a number of different types of rent-seeking behavior. On the one hand, for the states, while there is a significant benefit to central provision of pubic or private goods, each would prefer that the other units in the federation carry the burden of paying the costs of its provision. On the other hand, the central government also has incentives to divert resources to its own, potentially socially suboptimal purposes. This diversion could be for individual benefit of those in public authority, including corruption, patronage and electoral gains. But it could also encompass resource diversion to a subset of the states in the federation. In either case, there is an incentive for the center to act not as a welfare maximizer but as a rent-seeker.

In addition to strategic behavior, we observe that the center's ability to provide central goods, including monitoring of the states, is *correlated with its ability to extract rents*. Consider national defense: ceding both resources and authority to a central government for increased national defense does two things. First, it creates the national government's capacity to provide the good; second, it at once increases the central government's ability to impose credible threats on the states for noncompliance with its interests and diversion of rents to its own purposes. Similarly, in regulatory domains, ceding authority to make and enforce regulations to a central government not only creates the possibility for harmonization and reduction of trade barriers, but also the potential for differential treatment and rent extraction by the center. The sources of this correlation then is centrally housed in the *production*, *enforcement, monitoring* and *exit cost functions* of the cental and subnational governments.

The notion of central government rents is worth considering for a moment. These are of two sorts. The first and most obvious is corruption: personal enrichment by national political officials. A second source of rents is that the federal government may establish patronage systems and service to interest groups that gain it political support that can be used against the regions. Third, the center might collude with some group of states to extract rents and redistribute income from another group of states.

We capture these assumptions in a simple game theoretic model. The model is the infinite repetition of a stage game between a number of subnational governments (SNGs) or states and a central government. The federation is characterized by a number of parameters including the degree to which the center has institutional power. Using this model, we evaluate to what extent can the federation stick to its original rules in equilibrium and when will it diverge from it?

To represent these characteristics, we let z be the degree of power the center has and x_i be the amount of the central good provided by the center to a state i, $i = 1,...,N$. We assume that this good can be provided more efficiently by the center, and represent the efficiency gain by a productivity parameter $\theta(n,z)>1$. To capture the benefits of scale and power, we assume that the relative productivity of the center is increasing in both n, the size of the federation, and z, the institutional power of the center.

Finally, we assume that the states are obliged to contribute to the provision of the central good, which we index to unity. If a state contributes to this good in a period, we set the indicator variable k_i to one and zero otherwise. To capture the fact that there is the potential for moral hazard by each state, we further assume that the states are only observed imperfectly in their contributions so that they are revealed to be shirking with some probability q. Finally, we include two functions to represent, respectively, the center's ability to impose fines, $f(z)$, and exit costs, $c_i(z)$, on the states if they choose to do so. Both of these are increasing functions of the power of the center, meaning as more authority is granted to the center, the more it can impose costs on the subnational governments.

Thus, we express the preferences of the states and the center in each period of the infinitely repeated stage. We start by letting $s_i=1$ indicate that a state exits the federation in the current period. Alternatively, $s_i=0$ if a state has chosen to stay in the federation in that period, given that it has not previously exited.[2] If a state does not exit in the current period (in other words when $1-s_i=1$) a state obtains, for that period, a benefit equal to the amount amount devoted to the central good by the center multiplied by the center's productivity, or $\theta(n,z)x_i$. At

[2] Note we assume that a states' payoff is zero for all periods following exit.

the same time, a state's utility can be decreased in a given period in two ways. The first potential cost to the state is the amount of its contribution to the center k_i. Second, if a state has been fined by the center, indicated by $m_i=1$, then it incurs a cost $f(z)$. If a state exits in the current period, in other words if $s_i=1$, its payoff is to incur a cost $c_i(z)$ in that period and then receives zero for the remainder of the game. Putting these characteristics together, we can now fully characterize the payoff fora typical state *i* in period *t*:

$$u_i=(1-s_i)[\theta(n,z)x_i-f(z)m_i]-k_i-s_ic_i(z)$$

Similarly, we can also consider the center's utility obtained from the set of remaining states at the beginning of a given period. For each state that chooses to stay in the federation indicated as before by $s_i=0$, the center collects each state's choice of contribution k_i and any fines imposed, indicated by $f(z)m_i$. In addition, the center pays a cost for all of the resources it devotes to the central good. For each state, this cost to the center is denoted x_i. For all states exiting in the current period, the state extracts some benefit proportional to $c_i(z)$, which for convenience we assume is the full amount. Putting these assumptions together we can write down the center's payoff as the sum of each of these amounts over all remaining states::

$$u_C=\sum_i k_i-(1-s_i)[x_i-f(z)m_i]+s_ic_i(z).$$

2.2 Implications

Using this setup, we investigate the conditions under which a cooperative equilibrium can be sustained given the characteristics of the players. The specific concept we will use to solve this game is *subgame perfection* with Nash-reversion strategics. This allows us to consider those cases under which it is most likely the federation can be sustained as an equilibrium. The primary focus will be to answer the questions: given that a set of federal institutions have been adopted, when can an equilibrium be sustained in which the states do not shirk, the center does not extract rents beyond those defined by the institutions and the states do not exit; and concomitantly, how does any set of equilibria behave with respect to the parameters of the model?

The model generates a number of results concerning the sustainability of a federal system *given its institutions*. First, for all states to contribute, the expected fines from shirking $f(z)q$ must exceed the cost of contributing, that is $f(z)q>1$. Given the probability of detection q, therefore, a necessary condition for a stable federalism is that *the center must be strong enough to detect and punish potential shirkers*.[3] The condition also implies that as q drops, for an equilibrium to exist, f and therefore z, must increase. So policy areas which are extremely difficult to monitor will require the center to be more powerful in order for the federation to be able to overcome the common pool problem. But this in turn makes the federal system *harder* to maintain because increasing z also increases the center's ability to extract rents. Thus, in areas in which the moral hazard problem is severe, the dual incentives which operate in an opposite way make the set of equilibrium federations shrink. This provides another prediction of the model: *grants of authority to the center are more likely to be sustained in areas in which monitoring is relatively easy.*

[3] Elsewhere, we consider what happens when this ability to punish is at once correlated with the ability to obtain public goods benefits *and* an endogenous choice (de Figueiredo and Weingast 2001a).

Second, for a federation to be sustainable *there must be sufficient gains from exchange to motivate a stable federalism*. In other words, $\theta(n,z)$ must be sufficiently large. The logic, however, is different from models of decentralized cooperation in which the benefit stream alone must to prevent individual states from shirking. In this case, the benefits have to be sufficiently large in order to gain a surplus that prevents the center from a one-time appropriation of all contributions.

Third, the model allows us to better understand the *incentives* of each of the *N+1* players in maintaining a federal bargain. In particular, each player individually faces a choice of behaving "cooperatively" or "non-cooperatively." One way for the center to behave non-cooperatively, is to "take the money and run." In this degenerate case, the center extracts what it can and allows the federal bargain to fail. The center trades off this benefit against the ongoing expected rents it will achieve by not deviating in such a manner. This in turn implies that the minimum amount required to keep the federation together is the amount the center could extract by forcing degeneration, a value when averaged over the states we call x^{u*}. Another form of non-cooperative behavior by the center involves it extracting rents without providing public goods. Similarly, the states must also have an incentive to stick to the cooperative outcome. States can deviate from the assigned federal institutions in two ways. First, they can defect from maintenance of the bargain by shirking in at least a single period. Second, they can exit from the federation. In either case, the original terms of the federation have failed.

A successful federation solves both problems. First, shirking is prevented by a sufficiently strong center. Second, we must consider under what conditions will a state prefer to stay in the federation rather than exit? A state will prefer to remain in the federation if both the amount they must contribute is weakly less than the amount they get in return for staying in the federation and exit costs are high relative to their ongoing payoff.

Putting these two sets of incentives together tells us something about when the federation can be sustained in equilibrium. This happens only when both sets of incentives can be *simultaneously met*. Figure 1 illustrates the nature of these constraints. In the figure, the states are arrayed by exit costs. The dark heavy line indicates the minimum amount required to keep a state in. If the states are uniformly distributed along this interval, then the average amount that the center must spend on public goods is represented by the lower dashed line, an amount we call x^{L*}. The higher dashed line is x^{U*}, the maximum amount that the center must return to the states on average. If the center is required to return more than this amount in a cooperative equilibrium–in other words, if its individual contributions to the states on average exceeds this amount–the value of its ongoing rents are too low, and the center would prefer to break the equilibrium and extract all the contributions in a single period. Notice that as long as the minimum amount of rent applied to production of the central good required to keep a state in is less than the maximum allowable that still provides the center with enough rent for itself, then a "cooperative equilibrium can be maintained."

Given these incentives, there are a number of possibilities for the set of equilibrium federations given the parameters of the central good being provided and the nature of costs of exit. When $x^{U*}>x^{L*}$, there is a potential surplus to be divided between the players. This condition also implies that a *multiplicity of equilibria* exists, that is, a range of ways in which the federal surplus can be divided. Indeed, if the surplus, $S=n(x^{U*}-x^{L*})$, is positive, then any allocation of *S* that satisfies the condition that each state must be unwilling to exit is an equilibrium. Figure 2 illustrates this point. For example, three possible equilibrium profiles **x** include (1) the allocation of the surplus equally among the states (i.e. $\dfrac{S}{N}$ to each of the state); (2)

the allocation of all of the surplus S to a subset of the units; or (3) the allocation of all of the surplus to the center. In the knife-edge case, where the surplus is zero (i.e., $x^{U*}=x^{L*}$), exactly one profile $\mathbf{x}$ can be sustained as an equilibrium: each subunit gets precisely its minimum amount x_i^{L*}. This holds in order to provide an incentive for each state to stay in the federation, with the center keeping the remainder. Finally, if $x^{U*}<x^{L*}$, then *no sustainable federal equilibrium exists*. In particular, there is no profile $\mathbf{x}$ which can at once keep all of the states in and provide the center with sufficient incentive not to deviate, to "take the money and run". In this case, federalism is impossible to sustain.

Fourth, if the costs of exiting are sufficiently high, the states have an incentive to remain in the federation, although the center does not pass on all of the rents to the sub-units. This indicates that *exit costs can shift economic and institutional authority from the states to the center*. Both the upper and lower bounds on x_i^* are decreasing as exit costs increase. Because states will exit only if the center starts extracting *more rents* than the exit costs, the center must provide each state with sufficient rents above exit. But as exit costs rise, the rents necessary to keep a state in decrease. In sum, when the benefits are sufficiently large in relation to the exit costs, a stable federalism can be sustained.

Fifth, the *heterogeneity* in the states' cost functions means that the minimum level required to keep each state in the federation together differs across states. For those states that have a large cost of exiting, the minimum the center will have to pay to induce them to continue in the federation is lower. This opens up the potential in some equilibria for the center to *price discriminate*.

Sixth, in terms of total social welfare, *all allocations are not equal*. Define social welfare as the sum of benefits to all parties. Then equilibria which allocate more of the returns to the states (in other words in which the set of x's is higher in equilibrium) will result in more output. The reason is that the production technology benefit only accrues if C supplies public goods. Each unit kept by the center only accrues one unit of utility, whereas a unit spent on the production of the agreed good is worth $\theta(n,z)>1$. Each unit which the center collects but does not return to the states therefore represents an opportunity cost in public benefits forgone. Thus, any allocation in which the center gets some of the surplus results in a dead-weight loss to society.

Finally, and perhaps most importantly for the Russian case, the model shows that a federal system that exhibits non-compliance by the states can occur for one of two reasons, each exhibiting different "breakdown" features and each requiring markedly different prescriptions to enhance the capability and productivity of federal arrangements. The above discussion of incentives implies that we can characterize the set of equilibria as a function of the surplus and the institutional power of the center z.

As Figure 3 illustrates, there are three possible equilibrium outcomes, depending on the parameter values. Consider a case in which given the exogenous parameters of the model, there are some values of z for which the a positive surplus exists, as shown by the curve in the figure. In this case, when z is in the interval over which the surplus is positive, the federal system will be sustainable. When z is too low, the federation will break down as the center is too weak to limit shirking. Since z is low in this case, exit costs will also be low and the break down will take the form of secession and exit by states and the federation will literally disintegrate. When z is too high, the federation also breaks down. In this case, however, exit costs will be high, so when the equilibrium breaks down, states with relatively low exit costs will exit, but states with high exit costs will remain in the system. These remaining states, however, will simply not contribute and the center will try to extract as much as it can via its institutional power to punish. In this case, the result will be a center which is extractive, in other words no public goods are produced. Thus, *if the center is given too much power, if limits are not appropriately defined on its use of public authority, the system veers from the cooperative path, punishments are meted out, public goods are not produced and the states contribute nothing.*[4]

3. Applying the model

To demonstrate the plausibility of our approach and to understand the Russian case, we apply our approach to two other cases. First, we consider the problems with early American federalism under the Articles of Confederation (1781-87). These problems reveal remarkable parallels to those of modern Russia. Second, we discuss the successes and failures of federalism, Chinese style. Third, we consider federalism, Russian style. We develop two approaches to Russian federalism, the first following Blanchard and Shleifer (2000), emphasizing the common pool problem and a weak center; the second drawing on our model above emphasizing the dual problems of a center too weak to police regional shirking but also a center without sufficient bounds for the regions to trust.

3.1 American Federalism: From Articles of Confederation to Constitution

Nearly all the major turning points in American history can be studied from the

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[4] Of course, it might be the case that given the characteristics of the states, *no* equilibrium might exist, in which case only one of the two non-cooperative equilibria will maintain, depending on z.

perspective of federalism. Federalism is central element to the revolutionary crisis, the debates over the Constitution, the Civil War, Reconstruction and its end, the New Deal, and the rise of regulatory state in the 1960s and 1970s.

Central to our model is the tradeoff between central government power to provide public goods and prevent shirking on the one hand and power to encroach on state sovereignty on the other. If this balance is not struck properly, a federation will fail to exhibit full cooperation. If the center's power is too great, the federation will fail because there will be over-extraction by the national government; if the center is too weak, federalism will fail because the center will under provide public goods, states will shirk and create common pool problems, and the federation will break down; finally, if the states fear that the center will abuse its power to provide public goods, they may fail to grant the center sufficient powers or fail to cooperate with the center, again causing the federal system to fail. All three problems apply to the development and evolution of American federalism.

The principal criticism of the Articles of Confederation by Federalist leaders was that the national government had insufficient institutional power to supply critical public goods, primarily defense against British and European security threats, but also the maintenance of public economic structures, such as a common market and a common, stable currency. One of the core debates between the Federalists and Anti-Federalists concerned how to provide these goods. The Federalists believed that the national government should be granted strong taxation powers in order to have resources to achieve these ends. Some Anti-Federalists admitted a concern about the under supply of public goods. Nonetheless, most Anti-Federalists opposed the Federalists' proposals because they felt that the Federalist 'solution' — granting the national government strong taxation and monetary powers — presented too great a risk of predation by the national government.

In terms of our model, this debate concerned different views about how to tradeoff the center's powers to provide public goods and the risk of encroachment by the national government. Federalists wanted to raise the national government's institutional powers (raise z) so that the national government could prevent shirking (raise $f(z)$) and provide higher levels of public goods (raise $\theta(n,z)$). Anti-Federalists argued that nothing inherent in the grant of additional power to national government would prevent it from abusing that power (i.e., using f(z) to extract rents rather than punishing states for shirking).

Under the Articles of Confederation, the Anti-Federalists' political power allowed them to maintain the balance in their favor. States used a variety of means to block national action to provide public goods. For example, although Congress passed defense bills, it could not raise money to finance these measures. Instead the national government had to depend on the states to raise taxes to finance national legislation. But as our models highlight, because the center had insufficient enforcement powers ($f(z)$), many states refused to contribute. Put simply, state shirking hindered national defense.[5] Similarly, control of currency was also impossible. Rhode Island, for example, refused to discontinue its practice of "over supplying" and thus devaluing currency and hindering the center's ability to maintain economic property and asset values elsewhere. Further, some states hindered the development of a common market by establishing internal trade barriers, which had *not* been characteristic under British colonial rule. All three national public goods — adequate security, a sound currency, and the common market — suffered because of state free-riding in the face of the common pool problem: many shirked, thus

[5]It is worth recalling that the Federalists opened their famous debates with an extended discussion of the problems of national defense under the Articles (Nos. 2-5). Although these are not nearly as widely cited as those focusing on institutions, it is no accident that the Federalists opened with this topic (see Riker 1987).

under-providing national public goods ($\theta(n,z)$).

To resolve the under supply of public goods, the Federalists consistently proposed to grant the national government taxation authority. The Anti-Federalists successfully opposed these initiatives, however. Consistent with the model, they argued that granting the national government sufficient means to punish shirkers ($f(z)$) would mean loss of control over the national government and hence a loss of liberty. In other words, they worried that the national government would abuse its powers to extract rents.

Our model also suggests that one of the main problems with the Articles was that they did not clearly define the limits of federal authority. The Federalists' proposal to grant the national government additional taxation power failed to create limits on how far this power could be taken. Fearing predation, Anti-Federalists blocked Federalist initiatives to increase national power, resulting in an ineffectual federal system from 1781 to 1789.

The genius of the Federalists in creating the new Constitution was in the way they resolved this dilemma through institutional rules. Per our model, the Constitution first granted the national government sufficient power to provide the critical national public goods of national defense, common markets and common currency. Second, it created limits on the national government, thus constraining the national government's use of $f(z)$.

Limits on the national government took several forms. First, the Constitution contained a series of explicit limits on the national government: the national government had solely enumerated powers, with all other policy jurisdictions reserved for the states; the separation of powers system made it hard for extremists to take control of the national apparatus, so that "ambition would check ambition" (cite: Federalists). This system was reinforced by having an institution, the Senate, which would represent each state directly, allowing the federal entities a veto over national policy.[6] Similarly, the Supreme Court was established with the authority to enforce these rules.[7]

Second, the debates during the Revolutionary crisis and over the Constitution helped forge a consensus about how to limit the national government.[8] In terms of our model, the Constitution set limits on the national government by creating a coordination device that created a set of credible limits on the central government.[9] Violating these rules risked a reaction in concert by the states, threatening the survival of national officials or of the federation itself.[10]

To illustrate the use of these trigger strategies, consider the controversies raised under the Federalist President, John Adams, and his Secretary of the Treasury, Alexander Hamilton. Federalist officials sought to expand the national government powers in controversial ways, notably to promote economic development. And yet, in the late years of the eighteenth century, the Federalist's popularity waned. The Adams administration reacted with, among other things, the Alien and Sedition Acts of 1798. These acts attempted to suppress its political opposition, including the jailing of opposition newspaper editors — behavior we tend to associate more with modern Latin American states than the United States.

In combination, these policies and behavior prompted a political backlash. Many Federalist supporters switched sides to support the opposition, allowing Thomas Jefferson to

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[6]Riker (1964,**) and Ordeshook (1986) emphasize the importance of this type of institution for limiting the center's aggrandizement.

[7] As Bednar, et. al. (1995) show, the Court was better at policing the states than the national government.

[8] Rakove, Rutten, and Weingast (2000) make this point; see also Rakove (1996) and Wood (1969).

[9]The constitution as coordination device is pursued by de Figueiredo and Weingast (2001), Hardin (1989), Ordeshook (1992) and Weingast (1997a).

[10]As Arthur Schlesinger, Sr., (1922) showed, citizens in every state discussed secession at one point prior to the Civil War.

become president in the election of 1800. Indeed, the Federalist's behavior not only helped foster the development of an opposition party, but to spring-board it into power for twenty years (Wood 1992). The consensus lasted another generation, made the limits on government *self-enforcing*: politicians avoided violating widely-held precepts, since such violations would risk officials' political futures (Weingast 1997a).

In sum, the new institutions created by the Constitution moved the United States from a situation of non-cooperative federalism to cooperative one. The difference was not about the motives of the state officials, since these remained relatively unchanged across the two periods. What changed were the institutions and hence the incentives facing state officials. Incentives led to series of non-cooperative behaviors under the Articles, but cooperation under the new Constitution.

3.2 Federalism, Chinese Style[11]

Mao's death in 1976 left China in disarray. The cultural revolution had been an economic and political disaster. Further, Mao's death created a succession crisis. The latter was resolved in 1978 when Deng Xiaoping emerged as China's new leader. Deng sought to solve China's economic problems through market reform.

The Chinese Communist system implied significant problems of central government predation and opportunism. That is, z and hence $f(z)$ and $c(z)$ were quite high under Mao. In addition the informational apparatus of the central government was extremely effective, meaning that the ability to identify state shirking, represented by q, was also very high. These problems

[11]This section draws on our work in de Figueiredo and Weingast (2000) and also Montinola, Qian and Weingast (1995) and Qian and Weingast (19**).

became a major impediment to the central government fostering markets under Deng.

Deng addressed these problems through several strategies. First, reform was executed gradually rather than in a single, “big bang”, beginning with experiments that were subsequently expanded if successful and abandoned if not. Second, Deng began with agrarian reform, leaving the state owned enterprise system in tact. Agrarian reform eliminated the disastrous collectivist system. By turning land, equipment, and other capital over to the peasants, Deng created several hundred million peasant constituents favoring reform. The result was a significant boost in peasant incomes and in total production (cites).

Agrarian reform contributed to the central government’s commitment to economic reform in three ways. First, it created a huge, pro-reform constituency. Second, this could be undone only at the price of massive violence against the peasantry. Third, it demonstrated to others that the central government’s new initiatives were not tentative.

By the mid-1980s, China sought to extend its reform to industry and commerce. Here too, the problem of central government predation and opportunism loomed as a large impediment, since fears of such encroachment would vastly increase the uncertainty related to capitalist investments. The central government sought to limit the possibilities of predation and opportunism in several ways. First, this stage of economic reform was accompanied by complementary political reform. Although the Communist Party of China (CCP) retained its lock on national power, the central government devolved considerable power to lower governments. This new system of federalism granted considerable autonomy and power to the provinces and lower governments (Oi 1993, Montinola, Qian and Weingast 1995). Central to this devolution were new fiscal powers. Local governments, not the national government, collected taxes, forwarding the national government an agreed amount and keeping the residual. Local governments were also granted regulatory authority over the economies. These governments, not the national government, became the locus of decision-making over rules governing production and exchange. Finally, the national government slowly dismantled its planning and spy apparatus.

These institutional changes had several effects. The new fiscal powers allowed lower governments to act as residual claimants for locally generated tax revenue. Because they could keep most or all tax revenue beyond a certain amount, lower governments had strong incentives to foster local economic prosperity. Economic growth would benefit local citizens and local governments, not just the national government. Although not all local governments initially followed this path, several on the south coast did so aggressively, particularly Guangdong province. As Guangdong's impressive success became apparent, other provinces and localities began to imitate it.

At the same time, fiscal reform also limited the national government's resources in unforeseen ways, making it the poor relative to its political obligations (e.g., its welfare obligations associated with the SOEs). Importantly, fiscal stress further limited the central government's ability to encroach on the provinces.

The dismantling of the planning and spy apparatus also reduced the threat of encroachment. As economists emphasize with respect to the socialist planning system, the central government's information enhanced its ability to encroach and implied an inability to commit to non-interference (Milgrom and Roberts 1990) — e.g., not to raise quotas (Laffont and Tirole); not to subsidize, creating the so-called soft budget constraint (Dewatripont and Maskin; generally, see Riordan and Aghion and Tirole). Dismantling the central government's information systems reduced its ability to extract from lower governments and firms. Indeed, the

Chinese have a phrase reflecting this, "[get]", meaning "storing wealth in enterprises".

In terms of the model, the new reforms simultaneously lowered the central government's powers and raised those of the provinces. In terms of the model, this implies a fall in z, and hence in both $f(z)$ and $c(z)$. The ability of the central government to abuse its powers through opportunism was low. Of course, lowering $f(z)$ also allowed certain common pool problems to emerge. Many of the interior provinces used their increased reform to raise trade barriers, create local monopolies, corruption, and rent-seeking. And as Wong (19**) observed, a falling z implied a lower ability of the central government to provide certain types of public goods, including redistribution from the successful provinces to poorer ones.

We interpret China's policies for creating economic reform as including political reform that created a new system of top-down federalism.[12] By granting the provinces and lower governments new powers, China created a set of political actors with incentives to resist national encroachments on lower government power. All governments had incentives to resist.

Events after the bloody suppression of the Tiananmen Square demonstrations illustrate this point. This period witnessed the anti-reformists' strongest moment of power within the central government during the entire reform period (1978-present). At this time, China's Premier, Li Peng, sought to undo the fiscal system and provincial autonomy. A similar move had occurred on two previous occasions under Mao; both were successful. But in 1989, at a meeting of governors of the provinces, the governor of Guangdong province said no (Shirk 1993). Because so many provincial governors sided with Guangdong's governor, Li Peng backed down. China's

[12] Although, as we describe, the Chinese system emerged in a top-down setting, as the fiscal powers of the regions, both expected and unexpected, rose, this increased their leverage in defining the future evolution of federalism, Chinese style. In the end, therefore, one might consider the system as being a hybrid of top-down and bottom-up forms.

new system of federalism survived its biggest challenge. As our model suggests, the trigger-strategy threat of non-cooperation by the provinces proved central to policing the center's willingness to adhere to federalism's rules.

Implications of the model

Our model helps interpret these events. From the beginning, the central government represented the principal impediment to fostering a market economy. Under the Chinese socialist system, the central government's institutions were geared toward command and control, not the market. Hence the first steps in market reform were to reduce the reach of government.

In terms of the model, China lowered z, the institutional power of the central government, from its previously extremely high level. This had several simultaneous effects. First, it lowered the ability of the central government to punish lower governments, i.e., $f(z)$ declined. By design, this meant that the center could no longer force lower governments to tow the party line. It also meant that the center had less power to prevent common pool problems by lower governments. The reduction in monitoring, reflecting a decrease in q, meant that state shirking and non-compliance was made even easier. As a consequence, several provinces encroached on the common market by raising internal trade barriers. Finally, lowering z lowered $\theta(z,n)$, the ability of the central government to provide national public goods. In the beginning, this loss was potential, not actual. The reason is that the central government was not providing the necessary public goods to support a market, so reducing its powers did not lower these public goods. As suggested, several provinces used their new freedom to foster market growth.

The model also helps interpret China's current problems. The Chinese Communist Party's refusal to place restrictions on its control over the national government means it has been unwilling to allow constraints that would inhibit its ability to encroach on the market in the future — the potential for abuse of f(z) remains. Hence the central government remains relatively weak, including constraints on its ability to provide public goods. Although many analysts call for solving this problem by increasing the center's powers, our approach suggests that this alone will not solve the problem. The dual dilemmas of federalism imply that a country cannot simply resolve one problem — e.g., the center's weakness — without simultaneously addressing the other problem — preventing the center's abuse of its additional powers.

Our model helps interpret the events following Tiananmen Square. The provinces' resistance to the center's attempt to reduce their fiscal independence in part helped create a focal point trigger strategy limiting the center's ability to encroach on this aspect of reform. Per our theory, in the face of the collective resistance of the provinces, the center backed down.

Finally, this view of China's success differs from that of Blanchard and Shleifer. The Chinese central government may well be stronger than Russia's, as they emphasize, but that does not seem to be the essence of the difference. Like Russia, China's central government exhibits weak characteristics. For example, it has allowed several common pool problems to emerge due to freedom granted by the center (e.g., internal trade barriers and a degree of soft budget constraints; see Montinola, Qian and Weingast 1995). The critical difference is that, in contrast to Russia, China delegated considerable fiscal power and regulatory control over the economy and reform process to the provinces in a manner consistent with standard principles of federal organization. Moreover, the center has been able to credibly commit to this delegation, including a remarkable honoring of the fiscal contracts. Provinces that grew rich much faster than anticipated were still allowed to keep the excess revenue according to the ex ante revenue sharing agreements. This underscores an important difference between the Chinese and Russian central government: the lack of opportunism by the former. In short, China has been far more successful at addressing the first dilemma of federalism — preventing central government opportunism — than has Russia.

3.3 Federalism, Russian Style

We develop our approach to understanding federalism, Russian style, in a series of steps. Our first model begins with the Blanchard and Shleifer (2000) emphasis on the common pool problems. We then provide the second model, which focuses on the simultaneous and joint problems of an unconstrained but weak center along with common pool problems by the regions.

Model 1: Regions create common pool problems. Like China, Russia has a weak center. As part of its efforts to initiate a market economy, Russia too had to dismantle the planning apparatus and its wide range of polices designed to monitor and control the economy. In terms of the model, this implied a reduction of z and q. This in turn implied a reduction in $f(z)$ and $\theta(z,n)$, the ability to punish regions and the ability to provide national public goods. The economic decline at the end of the Soviet Union, continuing under the new Russian Federation, created fiscal distress for the center. This further eroded the center's power, further lowering z and hence $f(z)$ and $\theta(z,n)$.

Many analysts view the problem in Russia as too weak a center (Blanchard and Shleifer 2000, Shleifer and Treisman 2000; Treisman 2000; see also Solnick 1996). According to this view, the regions have too much power and have thwarted the center's efforts at economic reform.

A range of regional behaviors are consistent with this interpretation. The regions are sites of corruption and rent-seeking. Many also actively work against a number of economic reforms pursued by the center, often subverting the center's policies. Aspects of demonetization make the regions' policies hard to monitor. These regional choices raise transaction costs and often hide vast sums of local revenue, some of which would otherwise be shared with the center (OECD, 2000, Chapter 2; Shleifer and Treisman 2000, Chapters 5 and 6). Many regions foment active resistance to the center, extracting beneficial fiscal arrangements (Treisman 1999). Indeed, as Shleifer and Treisman (2000) argue, in many cases the regional governments collude with enterprises to deny the central government both revenue and policy implementation. Regions have also raised various forms of trade barriers, such as granting local firms privileged access to markets or prohibiting exportation of valued products (OECD, 2000, ***; Slider, 1997,498-99). The Russian fiscal system also has an element of a soft budget constraint, whereby the center often aids regional fiscal distress, particularly if the regional government cannot meet important policy obligations, such as subsidies to enterprises that would otherwise go bankrupt.[13]

As Blanchard and Shleifer (2000), Lavrov, Litwack, and Sutherland (2000), OECD (2000), and Shleifer and Treisman (2000) note, the above behavior clearly represents a massive set of common pool problems. Moreover, as these observers not, the center is too weak to effectively police the regions. In terms of our model, this argument is based on the observation that the center has too little institutional power, z. This implies that its ability to prevent common pool problems is low. That is, $f(z)q$, the expected penalty from common pool behavior, is low relative to the benefits of those behaviors. The problem is both that a low level of z implies a low $f(z)$ and that inventive regions have been able to hide their behavior from the center, lowering q, the probability of detection.

[13] Both Shleifer and Treisman (2000) and Zhuravskaya (1999) document the degree to which lower levels of government are helped by increasing transfers in response to increasing deficits.

In this view, the regions are a principal problem in preventing economic reform. The answer to this problem, according to Blanchard and Shleifer, is to increase the institutional power of the center. In terms of our model, this will raise z and hence $f(z)$. This increase makes it feasible for the center to police a wider range of errant behavior by the regions.

Model 2: The twin dilemmas of federalism. Our approach suggests that model 1 provides an accurate but incomplete approach to understanding federalism in Russia. Blanchard and Shleifer's proposal is much like the Federalist's initial proposals under the Articles: too weak a center implied, in their eyes, a need to increase the center's powers. Yet the Federalists' attempts to do so failed. As noted above, the reason is that increasing the center's powers also increased the potential for the center's abuse. As a consequence, the states resisted.

Like the early American Federalists under the Articles of Confederation, Blanchard and Shleifer focus solely on the second dilemma of federalism — common pool problems caused by subnational governments. This focus remains incomplete because it ignores the second half of the problem recognized as the first dilemma of federalism — the danger of a too powerful center.

Our analysis concurs with Blanchard and Shleifer's assessment that the regions exhibit massive forms of common pool problems, that this represents a major element of the failure of Russian federalism, and that the regions' behavior is at once a central impediment to economic reform and a principal source of non-cooperation within the Federation. Yet our model suggests a fundamental identification problem concerning the causes of this behavior. This behavior could be because the regions are simply bad and that there is no external check–in other words a sufficiently strong central government–to limit their behavior. But it could also be in part because the regions fear abuse of power by the center. The observation of state shirking and the breakdown of a federal system in which some units secede and others shirk is also consistent with the third type of equilibrium illustrated in Figure 3. Such a breakdown will occur not only when a central government is too weak, but also when a center is *too strong* and *unlimited* in its ability to aggrandize.

The center's behavior toward the regions suggests that it is far from a benign presence. Indeed, the center has undertaken a range of actions that suggest it too has made major contributions to problems of federal non-cooperation. First, the center has been willing to force regions to undertake a wide range of expensive programs without providing the means for them to finance them.[14] The center also uses tax and regulatory policy to restrict the regions' policy freedom. Moreover, the allocation of expenditures between center and region and the use of regulatory and tax authority are not consistent with raising social welfare in accord with any of the standard principles of fiscal federalism (OECD 2000, Lavrov, Litwack and Sutherland 2000, Wallich 1994). Some of Moscow's restrictive policies are designed to benefit its own interest groups; and many others have inconsistencies or other problems.

Second, the regions depend on the center for a large portion of their funds and are thus subject to the center's whims and constraints. Moreover, the center's budget decisions appear to reflect the ability of regions to make trouble for Moscow rather than in accord with standard principles (Shleifer 1997, Treisman 1999; Shleifer and Treisman 2000).

Third, the center's tax policy very little economic sense (OECD 2000). Many of the center's tax policies reflect its fiscal distress. Perhaps most importantly, the taxation and transfer schemes penalize more successful regions. Blanchard and Shleifer (2000), OECD (2000,**), and

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[14] Note that this problem is not unique to Russian federalism as the debate over "unfunded mandates" in the United States will attest (see, e.g., Ferejohn and Weingast 1996).

Zhuravskaya (1999) all observe a strong ratchet effect. This in turn provides a major motivation for regions to hide their activities, particularly those successful in generating more revenue.

A further rationale for regions to be wary of the center concerns the center's motives. By assumption, Blanchard and Shleifer cast the center as a benevolent maximizer of national social welfare. This seems patently false, as much of the center's policies are inconsistent with the goals. Worse, Blanchard and Shleifer ignore the problem that nothing credibly committed the center to economic reform. Yeltsin's government did pursue economic reform, although inconsistently. The dual absence of the center's credible commitment to economic reform and to limits on its authority implies rational concern on the part of the regions as to the motives of a future government.

In short, the policy, expenditure, and taxation decisions have all exhibited aspects of political opportunism. They cannot be rationalized as an attempt to pursue sensible economic and equity criteria. The regions have reason to be concerned about the Center's use of its power.

In the face of a center unwilling or unable to erect constraints on its abuse of its power, one of the few strategies for the regions is to resist the center's power. This point is obvious with the ratchet effect — hiding revenues by various strategies represents in part a means to protect local success from the center. Consistent with our model, collective resistence by the regions — e.g., in the form of withholding tax revenue from the center — keeps the center weak. This lowers z and thus lowers both $f(z)$ and $c(z)$. While it is true that lower $f(z)$ allows more common pool problems, it also reduces the ability of the center to extract from the regions.

In short, both the center and the regions exhibit non-cooperative aspects of behavior, and both contribute to the Pareto-inferior, non-cooperative federal equilibrium.

4. Reform of Russian Federalism

How might the Russian Federation resolve its dilemma? Our approach suggests that a more successful organization of Russian federalism must address both fundamental dilemmas of federalism. Russia is more likely to solve its problems if, at the same time it increased the center's powers, it also built institutional constraints an its ability to abuse its new powers. The center needs to be strengthened so that it can police common pool problems by the regions. But the center must also create a series of institutional bounds on its behavior that restrict its opportunism, its attempts to control too wide a range of regional behavior. These changes should occur both by the design of *ex ante* protections–which limit the *ability* of the center to abuse power for extractive purposes–and *ex post* protections–which make it easier for the subnational governments to *credibly punish* central aggrandizement. For example, the center must find institutional protections against both the ratchet effect in taxation that penalizes economic success and elements of the soft budget constraint that reward fiscal imprudence and bad economic policymaking. In this way, then, a cooperative, self-enforcing set of institutions can be developed.

Addressing both of the dual dilemmas simultaneously is more likely to get the regions to go along than addressing only the weak center alone. Of course, once the system is in place, regional politicians adjust. The adjustment includes selection effects that foster the rise of leaders geared toward this environment, who may not have an interest in solving Russia's problems because they may not be as likely to survive in the new environment. This selection effect implies that it is more costly to solve Russia's problems now than a few years ago.

Cooperation by the regions is far more likely if the center pursues more sensible policies and creates greater gains from the federation. The Russian Federation's structure contributes to non-cooperation by failing to provide improvements in social welfare associated with standard principles of federal organization. Indeed, as we emphasize in our companion paper, the Russian federation violates all of the major principles of federal organization — both classical economic ones associated with Hayek, Musgrave, Oates, and Tiebout — as well as more modern ones, such as those embodied in market-preserving federalism (de Figueiredo and Weingast 2001). In terms of our model, this suggests that the irrational elements of Russian policymaking keep $\theta(n,z)$ too low. In this light, the OECD's (2000) recommendations for improving Russia's federal are sensible for fostering long-term institutional stability and concommitant macroeconomic and political stability.

As described above, the American Federalists succeeded when they addressed the twin dilemma simultaneously; that is, by increasing the central government's power and by inventing a series of institutional constraints on the center's exercise of its powers. By limiting the center's ability to abuse $f(z)$, the Federalists convinced pivotal Anti-Federalist citizens to support the new Constitution.

Moreover, the American case shows that behavior by subnational governments in part reflects their environment. American states created several serious common pool problems, which disappeared under the new Constitution. A new constitution in Russia may do the same.

Similarly, notice the contrasts with Chinese Federalism. China has provided provinces with a sensible range of policy authority and autonomy in accord with both standard economic principles of federalism and those of market-preserving federalism (de Figueiredo and Weingast 2001b). Although the Chinese center has undergone far less change than Russia's — there is nothing like Russia's national elections — it has devolved power in a way that makes it less threatening to the provinces. Moreover, as the many of the provinces' economic reforms has succeeded, the accompanying fiscal success has granted them considerable countervailing power over the center that prevents the center's opportunism.

4. Conclusions

4. Conclusions

This paper focuses on the two fundamental dilemmas of federalism: too strong a center threatens to overawe the authority and independence of the subnational governments, potentially leading to a unitary state; and too weak a center potentially allows the emergence of common pool problems among the subnational governments, potentially leading to political disintegration. Moreover, these twin dilemmas imply a tradeoff: measures designed to mitigate one dilemma typically exacerbate the other.

Maintaining a stable federal system therefore requires creating a balance between these two problems. To be stable, the federation must create incentives for political actors at all levels to abide by the rules rather than encroach on the powers of other levels or pursue actions contributing to common pool problems.

We model these problems here using a simple game theoretic approach (de Figueiredo and Weingast 2001a). States must decide whether to contribute to the center, shirk, or exit. The center's decisions are more complex. It must decide whether to use its revenue to provide efficiency enhancing central goods or capture rents; whether to use its enforcement powers exclusively to police shirkers and common pool problems or to extract rents from subnational governments. The game has many equilibrium patterns of behavior, depending in part on various parameters.

A critical variable in the model is the center's degree of institutional power, z. Increasing *z* improves the center's ability to provide goods and police shirking. But it also improves the center's ability to extract rents. This variable thus embodies the fundamental tradeoff in federalism.

Our approach also suggests the importance of constitutions and pacts as coordination devices for the subnational governments against the center's potential abuse of its policing authority to extract rents. By creating common expectations about how the center uses its powers, constitutions, pacts, and other institutional devices can help subnational governments coordinate a reaction against potential violations of the rules by the central government. This form of coordination was central to the construction of the United States republic; and has been important in modern China (see Weingast 1997a).

To facilitate our understanding of the Russian Federation, we also apply our approach in two other settings, the early American Republic, and modern China. The struggle of all three federations with the twin dilemmas of federalism is central to the degree of these success in creating cooperation among the federal entities and in promoting economic growth. In brief, the early United States and China succeeded in providing an institutional environment that promotes cooperation and growth, while Russia has not.

The early United States under the Articles of Confederation was characterized by the inability of the national government to provide critical public goods, such as security and a stable monetary system, and by common pool problems among the states, such as internal trade barriers. Prior to the Constitution, the Federalists sought to rectify these problems by increasing the national government's powers so it could provide these goods. Each time, their opponents, the Anti-Federalists, defeated them using the argument that increasing the power of the national government threatened their liberty: In addition to increasing the ability to provide public goods, increasing the national government's power would also allow it to extract more from the states. In short, Federalists focused on the second fundamental dilemma, while their opponents emphasized the first.

The Federalists finally succeeded when with the new Constitution in 1787-89 when they addressed both dilemmas simultaneously. The Constitution not only increased the powers of the national government, but placed a range of constraints on the national government. These included institutional constraints, such as the separation of powers system; and also coordination devices, such as the provision of the Bill of rights stating that the federal government had only enumerated powers and that all others were reserved for the states. It is also apparent that the assignment of powers and authority to different levels of government under the Constitution reflects closely the principal lessons of fiscal federalism in economics as well as those associated with market-preserving federalism (see de Figueiredo and Weingast 2001b). In particular, the powers of the national government were strikingly restricted to truly national issues, such as security, a stable monetary regime, and policing the common market.

In contrast, the Russian Federation has not resolved the twin dilemmas of federalism, and both remain significant problems. A major feature of federalism, Russian style, is the fundamental lack of cooperation among the center and the federal subjects. Regions and republics exhibit a range of common pool problems, including: explicit attempts by the regions to ignore the center's policies, hide their activities from the center, and raise internal trade barriers. The center also has contributed to non-cooperation. It has forced a wide range of policies on the regions, largely for fiscal reasons, without attention to principles of policy assignment that underpin good policymaking (OECD 2000, ch2). The center also exhibits a degree of opportunism with respect to the regions, penalizing economic success.

The result is that the twin dilemmas of federalism underpin a substantial degree of non-cooperation in Russia. The center is too weak to police the common pool problems by the regions, and the regions distrust the center. Paralleling the Anti-Federalists' concerns prior to the United States Constitution, increasing the Russian center's power would at once increase its ability to police common pool problems, but also its ability to extract rents and control the regions.

Resolving Russia's federal problems requires addressing both dilemmas simultaneously. Solving common pool problems by the regions requires granting the center greater power. But preventing further encroachment and opportunism by the center requires creating credible bounds on the center's powers.

The answer, we believe, lies with two simultaneous strategies. First, creating a more rational basis for allocating powers among the different levels of government, as suggested by the OECD (2000). Second, embedding this new allocation in an institutional framework that provides some assurances that this political officials at all levels have incentives to abide by the rules.