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PROVINCIAL PROTECTIONISM

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ABSTRACT

Provincial Protectionism*

In a federal state, political leaders of constituent units might protect their enterprises from the federal centre (e.g., allowing them not to pay federal taxes). The effectiveness of such protection depends crucially on the ability of local authorities to extract rents from enterprises. They can easily do so, if there are a small number of enterprises with large employment, and local monopolies can be effectively sustained. They cannot do it so easily if regional industry is competitive, political opposition is strong, and the federal centre has enough means to enforce payment of taxes. We build a simple model to argue that it is the industrial structure of constituent units that determines political relations between them and the federal centre. The theory is supported by the recent experience of Russia, China, and Argentina.

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1   Introduction

In a federal state, political leaders of constituent units might protect their enterprises from the federal center. Though such protection is sometimes beneficial, the recent experience of Russia, Argentina and some other large federations shows that it might do much more harm than good. The willingness to protect depends crucially on the ability of local authorities to extract rents from enterprises. They can easily do so if there is a small number of enterprises with large employment, and local monopolies could be effectively sustained. They would have much more trouble extracting rents if regional industry is competitive, political opposition is strong, and the federal center has enough means to enforce payment of taxes. This paper aims to cast light on the interaction of political institutions and economic performance of a federalist system at the micro level, both inside and outside the modern developed world.

Today, there are two large de-facto federal states in transition from command to market economies, China and Russia.[1] Until recently, the results of these transitions have been profoundly different. Why in one of these countries has market-preserving federalism (Qian and Weingast, 1995, Weingast, 1995) developed, while the other country is stuck with market-destroying federalism? What are the specific features of Russian federalism that distinguish Russia from other federal states? Blanchard and Shleifer (2000) note that a crucial difference between Russia and China's transition to market economy is that Russia entered the transition as a heavily industrialized economy, while China had a relatively few large enterprises. Our paper argues that this difference lies at the core of Russia' federalism failure: the possibility to extract rents and political support from existing enterprises in exchange for protection against the federal center results in the suppression of intra-regional competition and promotes soft-budget constraints for managers. Ericson (1999) notes that " ... there seems to have developed a symbiosis, particularly at the regional and local levels, between governments and important businesses that goes well beyond what one would see were relations intermediated by law and law-structured markets." This translates into regions' relationship with the federal center, where "perhaps the most significant characteristic of federalism, Russian style, is the striking lack of cooperation between center and regions"

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[1] By constitution, China is a unitary state. However, it has recently became a major example of market-friendly federalist system (e.g. Montinola et al, 1995, Weingast, 2000).

(de Figueredo and Weingast, 2001a).

There is an on-going discussion on what forms of federalism are more likely to foster economic development (e.g., North, 1986, Weingast, 2000). Alesina, Angeloni, and Etro (2001) view optimal federations as those that balance benefits of centralization (internalization of externalities) and benefits of decentralization (adaptability to local conditions). Qian and Weingast (1997) suggest that the main role a federalist system plays is that of a commitment by the government to provide public goods and preserve market incentives. We do not challenge this view in any way: we show how the actual performance of a de-jure federalist system relies upon the industrial structure of sub-federal units of a federal country. Federalist arrangements that look the same in a written constitution might work well in rural provinces in China, and be harmful in heavy industrialized regions in Russia. Careaga and Weingast (2000) argue that it is not plausible to judge one federal system against another solely on the basis of the level of decentralization. We extend this argument by noting that the level of decentralization is not necessarily a matter of the center's policy or a decision at a certain point. Rather, many federal structures emerged to be far different from those drafted (and written about in books). For example, the Russian constitution places appointment of judges in the federal jurisdiction (with the intent to assure their independence). Nevertheless, regional powers have actually almost unrestricted influence over the regional judiciary in Russia. In contrast, according to China Security Commission Report to the US Congress dated July 2002, over 90 percent of China's approximately 180,000 judges are members of the Communist Party, which makes them subordinated to the nation-wide structure.

In this paper, we develop a theory of provincial protectionism, and illustrate it with a case study of the current federalist system in Russia. There is no argument about whether or not the actual Russian federal system is bad for growth. It is indeed bad. As de Figueredo and Weingast (2001a) put it: "Russia violates both the classical federal principles articulated by Hayek, Musgrave, Oates, and Tiebout as well as those associated with market-preserving federalism." Instead, we focus on the origins of this federal structure and its persistence. In particular, it appears that initial rent-holders managers of large and often inefficient enterprises in the case of Russia, whose rents would be eliminated if a market-preserving federal system were in place have strong incentives to oppose any positive development in federal re-

lations. A detailed report of the McKinsey Research Institute (1999) on the Russian economy stated that most fundamental micro regulatory factors are sector-level market distortions, which by creating a non-level playing field allow low-productivity companies in Russia to be more profitable (on a cash flow basis) than their high-productivity competitors. The report connects this to problems of separation of powers between the federal center and regional authorities: "The sector-level market distortions result from unequal laws and enforcement, originated in most cases by regional or municipal authorities in the absence of clear laws and/or strong control mechanisms at the federal level."

This paper attempts to provide consistent microfoundations for this picture. In doing so, we do not explicitly model the dynamics of transition from a command economy to the current federal structure characterized by powerful regional elites and a relatively weak center. Instead, our model highlights the importance of initial conditions. One general message is that federalism does not work without rule of law, supported either by strong independent courts and grass-root traditions (U.S. or Great Britain) or a powerful central authority (China). In China, the term 'provincial protectionism' is sometimes applied to protection of one province against another province, such as erecting trade barriers across provinces. Our main idea is relevant to this situation as well: It is the relative weakness of the federal center that allows governors to erect trading barriers, and it is the rents that can be extracted inside the province that gives governors incentives and resources to erect these barriers despite the center's fight for a common market.

One may argue that the view of the federal center as a benevolent, although imperfect, social planner is far more generous than it should be.[2] In this paper, our analysis is focused on the dark side of federalism, i.e. the perverse incentives that separation of power between the center and regions create, rather than on a full evaluation of the performance of federalism in transition countries.[3] Obviously, the same impossibility of the federal center in providing

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[2]Prudhomme (1995) and Tanzi (1996) analyze such dangers of decentralization as the inability of constituent units to take part in an economic stabilization policy pursued by the federal government.

[3]While in the Russian case provincial protectionism turns out to be a negative phenomenon, it is not universally negative. It might be argued that the ability of the Guangdong province to protect itself against the central government of China has been a crucial determinant of its economic success (e.g., Stiglitz and Qian, 1996). The theoretical model below might be used to explore potential benefits of provincial protectionism

correct incentives to regional firms directly, which lies at the core of our model, is a major motivation for the existence of separation of powers as suggested by Hayek (1945).

The "protection federalism" works as follows. Governors of rich regions having high political support choose to protect their enterprises from paying federal taxes. Lack of means precludes the federal center from effective policy towards these regions. In the region, the governor's aversion to cooperate with the federal center provides bad incentives for most profitable regional firms: they do not pay federal taxes, and bribe governors in exchange for protection. There are more restrictions on the entry of new firms, and thus lower social welfare, than in an equilibrium without protection. As a result, federal tax non-payments (arrears) are concentrated in regions with large productive enterprises, and the political strength of the governor accounts for accumulated tax arrears. Though we concentrate on tax collection in the subsequent analysis, similar consideration apply to other issues, where provincial authorities are able to subvert operation of a federal authority. For instance, OECD (2000) report states that in 1998, Russian provincial governments underfulfilled the 25 most important federal expenditure mandates by roughly 30 percent (see also Litwack, 2003).

At the regional level, governors are strong in those regions where there are few large enterprises that do not compete heavily with each other (i.e. belong to different industries). The basic starting point is that one can obtain a huge rent from enterprises by protecting them from intra-regional competition and the federal center. This allows the provision of transfers to bad enterprises, thus maintaining political power, and thus maintaining bargaining power with large firms. The governor might oppose the entry of new (profitable) firms since they may reduce his rents via competition, and may provide political support to his political rivals. If there are few strong enterprises in a region, the governor's protection for these enterprises against the federal center leads to more restrictions on entry to the intra-regional market. Such a situation might cause additional disincentives for enterprise management to restructure and pay taxes, since it becomes more costly for governors to control a restructured (or taxpaying) enterprise. Recent work by Slinko, Yakovlev, and Zhuravskaya (2003) verified empirically predictions of our model: in Russia, large and inefficient firms benefit

as well.

from preferential treatment, and the capture has adverse effect on small-business growth. The same study supports our prediction that size concentration in regional industry makes regional capture more likely.

The phenomenon of provincial protectionism is not confined exclusively to Russia. Tomassi, Saleigh, and Sanguinetti (2001) say about Argentina: "The non-cooperative behavior among provincial governments has also affected the collection of national taxes... This has occurred through very generous and poorly controlled regimes for industrial promotions ... [under which] exemptions from major national taxes can be allocated. " In five provinces (Catamarca, La Rioja, San Luis, San Juan, and Tierra del Fuego), authorities can legally postpone payment of major federal taxes for a period of up to fifteen years!

Based on Shleifer and Vishny (1993), Berkowitz and Li (2000) model the situation that government agencies of different levels can unilaterally levy taxes on the same tax base, as documented in Shleifer and Treisman (1999). Our model demonstrates how such a mechanism might work when tax rights are clearly defined.[4] Namely, the possibility of avoiding or delaying payments (e.g. through capture of bankruptcy, see Lambert et al, 2000) leads to competition of federal and local authorities over the fixed tax payments that accrue to the federal center, thus again exhibiting properties of a 'tragedy of the commons'. Shleifer and Treisman (1999) identify this phenomenon and derive implications without a formal model. While an OECD (2000) report acknowledges a number of serious improvements in Russian fiscal federal arrangements, the main problem remains to make such arrangements work in an appropriate way.

Litwack (2003) analyses relationship between the Russian federal and regional government within a multi-task principal-agent framework. Treisman (1999) considers Russian regions involved in Tiebout-like competition in political protection for enterprises. There is both theoretical and empirical evidence that multi-regional corporations have advantages in obtaining regional protection. A remaining problem that we try to touch upon here is how such competition might influence a governor's incentives to suppress/promote economic development in his region. The most recent empirical investigation of federal tax arrears in Russia is Ponomareva and Zhuravskaya (2000). Earlier studies include Alfandari and Schaf-

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[4]Berkowitz and Li (2000) assume from the very beginning that there are several independent tax agencies.

fer (1996), Ivanova and Wyplosz (1999), Schaffer (1998), Treisman (2000). Lambert *et al* (2000) suggest an explanation for why the federal center is unable to collect tax payments from regional enterprises. Frye and Shleifer (1997) and Frye and Zhuravskaya (1999) report findings on regional over-regulation and bribery. McKinsey (1999) was a major source of evidence for the current paper. Empirical findings of Zhuravskaya (2000) and Alexeev and Kurlyandskaya (2003) allows us to treat, at least at the first approximation, the Russian government as two-tier, although it is three-tier formally. Efficiency losses due to decentralization are analyzed in Inman and Rubinfeld (1997), McKinnon and Nechyba (1997), Sanguinetti (1994), Jones, Sanguinetti, and Tommasi (1999), and Rodden (2000). Chapter 11 in Roland (2000) provides theoretical framework for study of federalism in transition economies. Blanchard and Kremer (1997) and Qian, Roland, and Xu (2000) emphasize the role of initial conditions in explaining the different transition paths between China and Russia.

The rest of the paper is organized as follows. Section 2 introduces the setup of the model. In Section 3, we discuss comparative statics in regional equilibria. Section 4 analyses federal equilibria of the model. Section 5 describes federalism, Russian style, which we use as a motivating example. Section 6 concludes.

2   A Model

In this model, there are the federal center, regions, regional firms and regional politicians. In each region, firms have cash flows and tax obligations to the federal government. They decide whether or not to pay these obligations out of current cash flows and/or whether or not to seek the governor's protection from the federal government[5] and the intra-regional competition. The governor protects firms, takes payments from them, and looks toward re-election. Employees of firms constitute a part of electorate, and each additional firm entering the market brings some votes for the governor. Regions might differ with respect to the size of population that are not employed in firms, the 'unattached voters', and the

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[5]Lambert-Mogiliansky et al (2000) observes the similarity between the federal government and outside creditors, such as Moscow-based banks for Russian regions, in this respect.

potential output of their firms.

In each region, the there is a mass $\bar{s}$ of firms that can potentially enter the regional market. Firm i's taxable profit $\pi_i(s)$ depends both on the identity of the firm and is affected by the level of regulation s, $0 \leq s \leq \bar{s}$. Following Shleifer and Vishny (1993, 1998) and Djankov *et al* (2002), we treat regulation at the regional level as a restriction on entry, and so assume that s is both the regulation parameter and the number of firms entering the market. Therefore, each firm's taxable profit decreases with the number of firms s operating in the market, $\pi_i = \pi_i(s)$, with $\pi_i' < 0$, $\pi_i'' > 0$. A textbook Cournot oligopoly with a finite number of firms satisfies these assumptions: the profit of each firm decreases with a decreasing rate with the number of firms in the market. For simplicity, we assume that firms are ordered with respect to their taxable profits, $\frac{\partial \pi_i(s)}{\partial i} < 0$ for all s.

The governor decides on the number of firms that can operate in the regional market, s. If s firms entered, the governor receives $v(s)$ votes directly, $v'(s) > 0$, $v''(s) < 0$. Firms that have entered the market have tax obligations to the federal center, a share t of profits.[6] However, tax enforcement is imperfect. Each firm determines whether or not to pay federal tax obligations. If firm i, which has a gross profit of π_i, decides to pay taxes, the firm's pay-off is $(1-t)\pi_i$. If the firm decides not to pay, its pay-off is $(1 - t + (1 - \beta)t)\pi_i$, where β is a parameter reflecting the bargaining power of the governor against the firm. So, if $\beta < 1$ (and we confine our analysis to this case) any firm prefers not to pay taxes.

In this paper, protection from the federal center means that the enterprises being protected are allowed not to pay taxes that they owe to the center. However, there is nothing special about tax arrears as benefits provided by the regional administration at the expense of the central government. A subsidy to a loss-making enterprise or other favors given out of a deficit budget would have the same implications.

Firms pay the governor for protection, and the governor uses these means to get re-elected. For the sake of simplicity, we assume that his only goal is to increase his chances of keeping the office. Similarly, we assume that though the governor can restrict competition

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[6]We do not consider any regional taxes. Instead, it is implicitly assumed that a governor can use regional taxes to receive payments from firms. Shleifer and Treisman (1999): "To avoid sharing taxes with the federal government, regional governments also wrote off the regional tax obligations of local companies in return for public services they provide".

(e.g., imposing huge entry costs for new firms), he does not collect any entry payments from firms.[7] Alternatively, one might assume that the governor establishes a flat entry fee, and only firms with after-tax profits exceeding this fee enter the market. In our analysis, we normalize this fee to zero. A governor may choose the extent of his cooperation with the federal center, and thus the level of protection for those firms that do not pay taxes. Specifically, he decides on whether or not to protect a firm from paying the federal taxes. For each firm protected, he bears a political cost, with the monetary equivalent of p. If the number of firms could be restricted so that $\beta t \pi_0(s) > p$, then it is worth it for the governor to protect some firms from paying federal taxes. Summing up, the governor has the following problem:

$$\max_{0 \leq s \leq \overline{s},\ 0 \leq k \leq s} \left\{ V = \gamma(\beta t \int_0^k \pi_i(s)di - pk) + v(s) \right\},$$

where γ is the 'political exchange rate', which converts money into votes. For instance, if the region has a lot of unemployed workers (unattached voters), then γ is high. Similarly, the higher is the level of political competition in the region (the stronger is the intra-regional opposition to the governor), the lower is γ. One might interpret $\frac{1}{\gamma}$ as the 'price of votes' in the region. At the cost of simplicity, one may make γ endogenous. Though additional insights of such an extension seem to be limited, we discuss this possibility later.

The federal center's main goal is simply to increase tax collection, given tax rate t. In Russian reality, there are three basic types of federal policy: direct control over firms that do not pay taxes, involvement in the regional political process, and transfer policy. With the latter, the center can motivate governors by determining transfers to regions conditional upon their performance. In our model, there is one parameter reflecting the center's influence over a region, p, the cost of protecting a firm from federal claims, and one parameter reflecting the strength of the political opposition to the governor, γ.

The federal center can affect the cost of protection for the governor of region q, p_q, by spending scarce financial resources. Let T be the amount of resources available to the center. On the one hand, T is the total amount of taxes collected by the federal center, T. On the other hand, T is the amount spent by the federal center on control of governors, $T = \sum_q c(p_q)$,

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[7]Definitely, small firms pay a lot of bribes to overcome extensive regulation. However, these bribes are collected for the most part by low-level bureaucrats.

where $c(p_q)$ is the cost of maintaining the level of control of governor q at p_q. In the next section we analyze incentives an individual governor faces and so treat the parameter p as exogenous. Analyzing interaction at the federal level in the subsequent section, we first give a formal description of the game governors play against the center, and then incorporate regional-equilibrium results into a more broad picture.

3   Regional Equilibrium

A Politician and Many Firms

First, we analyze what happens at the regional level. Before proceeding to the formal analysis of the first-order conditions for the governor's maximization problem, we note that if the governor chooses not to protect a firm from paying federal taxes, he has no incentives to restrict competition at the regional level (i.e. to choose $s < \overline{s}$). In particular, the governor cannot protect any firms provided that

$$\gamma \beta t \pi_0(0) < p.$$

In this case, his optimal choice is free entry to the regional market, $s^* = \overline{s}$. The simple condition above gives meaningful comparative statics. Incentives to have competition suppressed are weaker if he faces strong political competition within his region (γ is low), has insufficient bargaining power versus firms (β is low), and the cost of protection imposed by the federal center is high (p is large). An increase in the tax rate, t, makes protection more attractive as it increases the benefits the governor receives without affecting his costs. An important, though straightforward, result is that larger profits of regional enterprises (here, $\pi_0(0)$) make protection from the federal center more attractive. This is the first illustration of the idea that incentives to restrict local competition and incentives to protect enterprises from the federal center are mutually reinforcing.

If the governor chooses some level of competition at the regional level, s, and some level of protection against the federal center, k, the number of votes he receives is $V = \gamma(\beta t \int_0^k \pi_i(s)di - pk) + v(s)$. Increasing the number of firms entering the regional market has two countervailing effects: first, each additional firm brings $v'(s)$ more votes to the governor's

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column; second, the profits of firms that have already entered the market diminish by $\pi'(s)$. The governor is willing to protect a firm against the federal center as long as his share in the taxes of the firm being protected exceeds the cost of protection, p. Since each firm's profit is affected by the level of regulation, the governor faces the following trade-off: increasing s brings more votes directly, but makes protectionism less attractive.

The first-order conditions at an interior point are

$$
\begin{aligned}
-\beta t \int_0^{k^*} \frac{\partial \pi_i(s^*)}{\partial s} di &= \frac{1}{\gamma} v'(s), \\
\beta t \pi_{k^*}(s^*) &= p.
\end{aligned}
$$

To ensure the second-order conditions hold, we assume that $\gamma \beta t \int_0^{k^*} \frac{\partial^2 \pi_i(s^*)}{\partial s^2} di + v''(s) < 0$. In essence, this assumption means that the rate with which the total profit of firms being protected decreases with s exceeds the growth rate for the direct political support to the governor. If this assumption does not hold, e.g., if $v(s)$ is linear in s, the results will be no less meaningful: In this case, the governor either protect all the firms that entered the market, or allows all firms to enter the regional market and protects none of them.

The right-hand side of the first of the first-order conditions shows that it is employment relative to political competitiveness that matters: Indeed, if political opposition is weak, votes are cheap to the governor, and he is less interested in receiving support from promoting competition (allowing more firms into the market). If political competition is very strong (γ is close to zero), money is not important for the governor, and hence he has fewer incentives to protect firms from the federal center. We summarize the above discussion in the following proposition. (A formal proof is relegated to Appendix.)

Proposition 1 *A governor has more incentives to protect regional firms from paying federal taxes (chooses a larger k^*) and more incentives to restrict entry at the local level (chooses a smaller s^*), the higher is the bargaining power of the governor with respect to large enterprises (β is large), the higher is the tax rate t, the lower is political competition inside region (γ is high), and the higher is political attachment of voters (the slope of $v'(s)$ is higher).*

These comparative statics results deserve additional discussion. One important finding is that if profits of large firms are low than the governor has fewer incentives to restrict entry

to the market. This is a simple illustration of the Blanchard and Shleifer (2000) paradigm. In China, at the beginning of transition, there were very few firms that earned large rents in the absence of competition. In Russia, many regions had enterprises with high cash flows and large employment, and it is their rents the governors protect from competition both in- and outside the region.

The cost of protection, p, reflects the governor's ability to protect firms in his region. The federal center can impose a cost on the governor in various ways. For example, it might use local offices of federal enforcement agencies to enforce payments of taxes. The next proposition describes how the regional equilibrium changes if the cost of protection of regional enterprises from the federal center increases. A higher p forces the governor to reduce the number of firms protected from the federal center for two reasons. First, with a higher cost of protection, the least profitable of large firms are no longer protected. Second, the relative value of small-firm employees for the governor increases, and he becomes less willing to sacrifice competition for rents of the protected firms.

Proposition 2 *An increase in the cost of protection from the federal center, p, provides the governor with more incentives to enhance intra-regional competition (s^* increases), and fewer incentives to protect large firms from the federal center (k^* decreases).*

In Lambert *et al* (2000) and Ponomareva and Zhuravskaya (2000), an index that reflects the relationship between governors and the federal center, compiled by the investment company MFK Renaissance, appears to be a significant determinant of the number of governor-controlled bankruptcies and the size of tax arrears, respectively. Also, the latter paper finds that regional enterprises have more tax arrears when regions have higher bargaining power *vis-a-vis* the federal center (that is, lower p) and higher GRP per capita. The above proposition provides an explanation for this common phenomenon in Russian regions.

Instead of trying to raise the cost of protection, p, for the governor (using regional branches of federal agencies, or suing governors in courts), the federal center often directly helps alternative candidates, or at least threatens to do so. In many local elections, the involvement of the federal center kept incumbents with high chances of being re-elected off the ballots.

Proposition 3 *The thresholds k^* and s^* separate regional firms into three sets: firms i, with $i < k^*$, enter the regional market, do not pay federal taxes, and bribe the governor; firms with $k^* \leq i < s^*$ enter the regional market and pay federal taxes; firms with $s^* \leq i \leq \overline{s}$ do not enter the regional market.*

In particular, Proposition 3 implies that an individual enterprise's tax non-payments are more likely to be high if it has high profit and/or high employment. (To evaluate the effect of employment on the likelihood to be protected, we assumed that if a firm has excess employment, it is waived a part of the protection fee. Details are provided in the Soft Budget Constraint section.) For Russia, the implications of this proposition are supported by data: the reported median productivity of firms with tax arrears is 60.75 (mean, 133.62) bln rb/worker compared to 34.43, the median productivity of all firms in RERLD (mean, 75.59) in 1997, as reported in Ponomareva and Zhuravskaya (2000). (The 1996 data were 53.96 (mean, 126.24) compared to 30.74 (mean, 68.01).) Tax arrears at the end of 1997 were significantly higher for firms with high cash flows at the beginning of 1997; and are higher for enterprises with high employment.

To compare two regions endowed with different industrial structures, we characterize them by two families of functions: $\pi_A = (\pi_{Ai}(s))_{i,s}$ and $\pi_B = (\pi_{Bi}(s))_{i,s}$. This allows us to see what happens if one region (region A in the following proposition) has more profitable enterprises than another (region B).

Proposition 4 [8]*Suppose that the level of intra-regional competition, s, is fixed and the same for both regions, and suppose that $\pi_{Ai}(s) \geq \pi_{Bi}(s)$ for all i, $0 \leq i \leq s$. Then the governor of region A chooses to protect more enterprises and receives more votes, than the governor of region B. Region A accumulates more unpaid taxes to the federal government.*

The key assumption in the above proposition is not as restrictive as it may seem: it basically says that for any given level of profits, region A has more enterprises with profits exceeding this level than region B. In this case, total profits of firms in region A are at least as large as total profits of all firms in region B. It is not unexpected that governors of generally richer regions have more room for protection of their enterprises. It is a more cumbersome

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[8]A proof of this Proposition is relegated to the Appendix.

task to single out the effect of industrial concentration, since there are countervailing forces in place. An increase in industrial concentration may have two effects: one is that increased profits of firms would allow the governor to protect more firms; the other is that increasing concentration below the protection threshold p does not directly force the governor to protect more firms from the center, but reduces his willingness to restrict local competition, and so the overall effect is the opposite.

Governors, Strong and Weak

In a region, the governor may be either strong or weak, as measured by the number of votes collected (in equilibrium) at the regional election:

$$V(s^*, k^*) = \gamma(\beta t \int_0^{k^*} \pi_i(s^*) di - pk^*) + v(s^*).$$

Our theory suggests that the main determinant of the potential strength/weakness of the governor is the industrial structure of his region. If there are several large enterprises with high cash flows that are not competing with each other (e.g., being local monopolies in different industries) and a large number of 'unattached voters' (γ is high), it is likely that the governor would be strong. If the regional enterprise compete heavily in the market (and thus to extract rent from them it is necessary to exclude their competitors), they are likely to seek protection from different candidates, and whoever the winner is, he is potentially weak.

Formally, when a governor is strong? Any governor is trading-off votes he receives from promoting competition for votes he buys on the market. The less severe is this trade-off, the stronger is the governor. To study this in a formal setup, we simplify the general model as follows. Suppose that there is a share a of 'large' enterprises, each of which has a profit $\pi(s)$, which depends on the number of firms that entered the regional market. All other firms have taxable profit of 0. As above, $\pi(s)$ is decreasing in s, and $\pi''(s) > 0$. So, the governors faces the same trade-off as in the general model: increasing s means more votes, but less rents. One advantage of this simplified model is that the governor either protects all the large enterprises from the federal center, if the optimal s^* is such that $\beta t \pi(s^*) \geq p$, or does not protect any enterprise at all.

To compare two regions endowed with different industrial structures, we characterize them by two functions: $\pi_1(\cdot)$ and $\pi_2(\cdot)$. To deal with industrial concentration, we adopt a simple assumption that $a_1\pi_1(s) = a_2\pi_2(s)$ for all s, $a_1 < a_2$, while other parameters being the same. So, region 1 has a more concentrated industry, than region 2: a smaller mass of enterprises in region 1 earns the same total profit as a large mass in region 2. First-order conditions yield that $s_1^* < s_2^*$, that is, in the region with more concentrated industry, the governor prefers less competition. The intuition behind this proposition is clear. At the same cost, the governor of the region with a more concentrated industrial structure could extract more rents and buy more votes. For this governor, intra-regional competition poses a smaller threat than for the governor, where profits of the firms fall quickly with the number of competitors. Slinko *et al* (2003) found empirically that in Russian regions size concentration does increase the likelihood of state capture, which in turn leads to lower collection of the federal taxes.

Proposition 5 *The more concentrated is the industrial structure of the region, the fewer firms are allowed into the regional market and the more are unpaid taxes to federal government.*

The same logic allows to identify the cases when the governor is strong. His value function is now

$$V = \max\{\max_{0 \leq s \leq \overline{s}} \{\gamma(\beta a t \pi(s) - p) + v(s)\}, v(\overline{s})\}.$$

As above, the industrial structure of the region is characterized by the function $\pi(\cdot)$. Furthermore, we assume that $\pi(s) = a - bs$, $a, b > 0$ and $v(s) = s^\alpha$, $0 \leq \alpha < 1$, and $1 \leq a/b \leq \overline{s}$. Let s^* denote the unconstrained maximizer of $V(s) = \gamma(\beta t(a - sb) - p) + s^\alpha$, i.e. let s^* satisfy the condition $\gamma\beta tb = \alpha(s^*)^{\alpha-1}$. First, we consider the situation, when $V(s^*) > V(\overline{s}) = v(\overline{s})$. This might be the case only if s^* is such that $a - s^*b \geq \frac{p}{t\beta}$, since $V'(s) < v'(s)$ for all $s < a/b$. Then

$$s^* = s^*(\alpha) = (\frac{\alpha}{b})^{\frac{1}{\alpha-1}}.$$

The smaller is α, the higher is the number of votes the governor receives. Moreover, there exists some $\widetilde{\alpha} > 0$ such that for any $\alpha < \widetilde{\alpha}$, $\frac{ds^*(\alpha)}{d\alpha} < 0$. Intuitively, smaller α means that each

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entering firm brings more votes at least unless $s = 1$ firms entered, and our assumptions assure that $s^* < 1$. The comparative statics with respect to b is also meaningful: higher value of b imply higher value for $s^* = s^*(b)$ and lower value for $V(s^*)$.

Now consider the opposite situation: $V(s^*) < V(\overline{s}) = v(\overline{s})$. In this situation, the governor does not protect any firms from the federal center. First, we note that for any given industrial structure, if the potential market $\overline{s}$ is large enough, the governor opts for $s = \overline{s}$. The cost of protection p affect the number of votes only in the case if firms are protected from the federal center. The number of votes decreases with p until $a - sb = p$, and then the governor switches to $s = \overline{s}$.

This argument allows us to identify two types of situations when governors are strong: First, when a is large, b is small, and α is close to zero: these governors have a small number of highly profitable enterprises and votes are relatively cheap for them. In other words, the more concentrated is the industry, the larger is the share of the governor's votes that comes from the 'unattached' voters (that cost γ to him), and the lower is the share that comes from the 'attached' ones. The second type of strong governors appears in regions, where the number of potential entrants ($\overline{s}$) is large. In other words, those governors are strong that face a less severe trade-off between supporting entry of new firms and decreasing profits of those that have already entered. The following Proposition summarizes the above discussion.

Proposition 6 *Suppose that the governor protects firms from the federal center. The governor is stronger, the larger is a (industry concentration), the smaller is b (price of the votes), and the smaller is α (elasticity of votes with respect to efforts to promote competition) provided that α is sufficiently close to zero.*

This logic has a further extension. Now suppose that the 'price of votes', γ, is endogenous and depends negatively on s^*, that is the more enterprises are protected by the governor, the less votes are up for sale by the unattached voters. The parameter γ might be a proxy for the employment of those enterprises in the region that can not provide political support for a candidate in any organized way. A strong governor has a lot of money from the protected enterprises and buys cheap votes. If enterprises were free to choose a protector, enterprises under the governor's control would have little incentives to support other candidates. A

strong position allows the governor to protect the enterprises from the federal center, thereby increasing their rents and campaign contributions, and maintain monopoly power of these enterprises. Therefore, this situation is self-sustainable: strong position allows to extract rents and increase probability of re-election, which in turn makes the position even more secure. A weak governor provides little protection to enterprises, which in turn provide him with little bribes (campaign contributions). Thus, the governor relies on employees of his protected enterprises, rather than on buying non-attached votes. This in turn allows enterprises to switch from one candidate to another (especially, if we consider a finite number of enterprises). The set of parameters that supports that kind of equilibrium assumes high s^* (or k^* relative to α).

Summing up, the total payments for protection are high when (i) there are a lot of profitable firms in the region; (ii) the governor is strong. The strength of the governor as proxied by the number of votes he received in the last elections allows him to provide more protection to the regional enterprises. Ponomareva and Zhuravskaya (2000) find that the governors that have higher winning margins in past elections tend to provide more protection to firms, and thus their regions maintain higher amounts of tax arrears.

Protection and the Soft Budget Constraint

If all enterprises had the same profit, it is reasonable to expect that the governor's choice would be to support firms that have higher employment. To address this issue, we focus on the governor's choice between firms with heterogenous employment. If one firm could deliver some extra votes to the governor, there would the possibility of politicians-and-firms-type play between the governor and each firm (Shleifer and Vishny, 1994). Formally, suppose that a firm that has ΔL of excess employment has a pay-off of $\pi(s) - w\Delta L$, where w is the region-wide salary. The firm might suggest to the governor the following deal: it maintains the excess employment, delivering the additional ΔL votes to the governor, but pays a bribe b instead of $\beta t \pi(s)$. The governor accepts this offer as long as $\gamma b + \Delta L \geq \gamma \beta t \pi(s)$.[9] For the firm, it is profitable to maintain excess employment of ΔL and pay b to the governor

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[9]In this section, we always assume that $\beta t \pi(s) > p$, and so the governor prefers to protect, rather than to let the firm to pay taxes.

if $t\pi(s) - b - w\Delta L \geq (1 - \beta)t\pi(s)$. This trade is possible if and only if $\frac{1}{\gamma} \geq w$. Here, $\frac{1}{\gamma}$ is the governor's marginal benefit of excess employment. If the political opposition in the region is strong (γ is small), than additional employment is more important for the governor. Thus, stronger political competition in a region may well provide managers of enterprises with perverse incentives. For comparative-statics purposes, assume that the governor and the enterprise share the extra surplus equally (this corresponds to the Nash bargaining solution). Then

$$b^* = \beta t\pi(s) - \Delta L(\frac{1}{\gamma} - w),$$

and so to have higher bribes, the governor has incentives to restrict competition (reduce s). Clearly, the higher is the excess employment a firm maintains, the less money the governor receives.

The same story might be told about entry to the regional market. The possibility of using excess employment instead of bribes makes it possible that firms that are less profitable (and have lower labor productivity) enter the regional market, while more profitable firms are driven out. Here, protection against intra-regional competition may also be viewed as a fine imposed on value-creating firms. McKinsey's (1999) report on Russia states that as a result of subsidies to troubled enterprises, "financially sound companies end up paying taxes and energy bills 'for themselves and the other guy'". Formally, we state this in the following proposition.

Proposition 7 *Regional protectionism provide managers with incentives to maintain excess employment (soft-budget constraints). Stronger political competition leads to more excess employment.*

The problem might become much more severe if a firm's internal cost of keeping excess labor is $w_f < w$, i.e. is below the region-wide wage rate.[10] The reason is that provision of social goods (which might attach workers through in-kind payments as suggested in Friebel and Guriev, 2000) often involves huge fixed costs, which at the beginning of transition were already sunk for old soviet enterprises. Proposition 7 demonstrates firms' disincentives to

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[10]Friebel and Guriev (2000) imply that this internal cost of maintaing employment might be much lower for the firm than the wage rate.

restructure: if restructuring assumes layoffs, as is often the case, the firm loses (a part of) its bargaining power. Given the contribution of the protected firms, the governor prefers them to have as many employees as they can accommodate, thus reducing productivity. An important ingredient in this result is that enterprises control the votes of their employees. Large command-economy-type enterprises especially have low w_f: in the above model, this both increase the likelihood of bribe-for-votes exchange and and the rents of both parties.

Here is where the result of political decentralization may promote soft budget constraints for managers, instead eliminating them as in Qian and Roland (1998). With provincial protectionism, less productive firms might be kept in the market, while more productive are rejected access.[11] The McKinsey report (1999) finds that one of the main operational reasons for persistent low productivity in Russia is excess employment maintained in old firms. The output of old companies fell by 50 percent, while employment fell by only 20 percent. McKinsey estimates that 10 percent of workers on average are redundant, while another 20 percent are currently stranded in non-viable operations. The report says that "These inequalities [in competition] tend to favor low productivity incumbents, protecting them from takeovers and productive new entrants. These policies are often put in place to achieve social objectives, namely protecting existing jobs, but in many cases, the suspicion is that they also serve the personal financial interests of government officials in collusion with businessmen."

4 Federal Equilibria

To analyze general-equilibrium aspects of regional protectionism, we consider a game that regions non-cooperatively play against the federal center and each other. Here our emphasis is not on the standard coordination failure, where all regions choose to protect themselves from the federal center, but on the mechanism that translates protection against the federal center into governor's incentives to suppress intra-regional competition. In the previous

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[11]Chinese experience tells us that if entering firms use new technology such that their profits are very high compared to those of incumbent firms, governor's incentives to suppress entry might be reversed (e.g., Stiglitz and Qian, 1995).

section, we studied this mechanism at the regional level. Now we turn to the provinces vs. the federal center game.

The game is played as follows. First, the governor of each region chooses a level of his relation to the center, i.e. whether or not to provide protection for regional firms. Second, observing the governors' policy, the federal center determines its policy toward regions, i.e. p_i for all $i \in I$. For simplicity, we treat these p_i is ex-post punishments, expected by the governors at their decision node. Furthermore, we maintain the assumptions made above: there is a share a of 'large' enterprises, each of which has a profit $\pi(s)$, and all other firms have taxable profit of 0. $\pi(s)$ is decreasing in s, and $\pi''(s) > 0$. Here we are interested in sub-game perfect Nash equilibria of the game.

In a generic case, parameters are such that there exists two stable equilibria, one with all regions cooperating with the federal center, and one with regions maintaining high level of protection for their enterprises. First, we consider the case when the federal center has enough resources to punish violators, when needed. Any of these policies, i.e. money spend on increasing the probability of a particular enterprise to be caught avoiding tax payments or/and support of local politicians who are friendly to the federal center, makes the good equilibrium stable. Since the federal center can commit its resources to fighting any governor who deviates from a good equilibrium, no governor would find such a strategy attractive.

Suppose that all provinces are identical, and let s^* be the governor's optimal choice. We need to consider two cases. First, suppose that the governor opts to protect enterprises from the federal center, that is $-\beta t \pi'(s^*) = v'(s^*)$ and $\pi(s^*) > p$. Then, there are no revenues in the federal budget, and thus the cost of protection for the governor is zero. If protection is costless, any governor chooses to protect enterprises rather than not, so this is a sub-game perfect Nash equilibrium. Another case arises if there exists a punishment p such that $\pi(s^*(p)) < v(\overline{s})$ and $c(p) < (N-1)t\pi(\overline{s})$. The right-hand (revenue) side is the sum of the $N-1$ provinces tax receipts. The inequality shows that the center has enough means to prevent the Nth governor from protection his firms, and thus there is a no-protection equilibrium. The term $\pi(\overline{s})$ appears in this inequality, since if the governor does not protect enterprises from the federal center, he has no incentives to suppress intra-regional competition, and so $s^* = \overline{s}$. De Figueredo and Weingast (2001b) conclude that "a necessary

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condition for a stable federalism is that the center must be strong enough to detect and punish potential shirkers." The fact that the federal center can use resources obtained from other regions to fight a defector and thus sustain the no-protection equilibrium shows that the constituent units have incentives to coordinate for collective action against the center. In Russian experience, the governors of regions put a lot of efforts to coordinate their fight with the federal centers. In many situations, it was the position of governors, who had a legislative power at the federal level as the members of the upper chamber of Russian parliament, that does not allow the federal center to punish some governors.[12] In any case, whether or not the province-coordination effect is taken into account, these two equilibria highlight the two distinguished possibilities: either there is an economy, where large enterprises do not pay taxes, and small enterprises are driven out of the market, or there is an economy, where taxes are paid and thus there is no need to suppress competition.

Proposition 8 *For a generic set of parameters, there is an equilibrium with high intra-regional competition and little protection from the federal center provided by the governors, and enterprises paying their obligations to the federal center. This equilibrium is characterized by p such that $\pi(\arg\max\{\beta t\pi(s) - v(s)\}) < v(\overline{s})$ and $c(p) < (N-1)t\pi(\overline{s})$. Also, there is an equilibrium with all governors protecting their profitable enterprises from federal tax payment and restructuring $(-\beta t\pi'(s^*) = v'(s^*)$ and $\pi(s^*) > p.)$. In such a 'protection' equilibrium, governors support less competitive environment in their regions.*

Now the regional-level analysis carried through in the previous sections provides conditions that make the equilibria more or less likely.

As we argued above, the protection equilibrium might be supported by the coordination effect. Having scarce resources, the federal center could not fight all regions at the same time. This potentially suggests some policy implications: to eliminate the coordination problem, the federal center should concentrate resources on fighting protectionism of a few regions, instead of dispersing resources between all regions. Carreaga and Weingast (2001)

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[12]The current reform of the federal system in Russia started from changing the way the upper chamber of the parliament is formed. Now it is filled with (non-elected) representatives of regions, which are subordinated both to the governors and regional legislative chambers, and are believed to be much more dependent on the federal center than the former senators, the governors themselves, were.

analyze the successful federation-building strategy by the Mexican government after 1930. Sequential involvement of provinces in more close cooperation with the federal center has been an essential part of this strategy.

What Makes a Federalist System Work?

Blanchard and Shleifer (2000) argue that it is the lack of political centralization that is responsible for Russian federalism failure compared to that of China, where the federal center is relatively strong. If the federal center has enough resources or a way to employ the existing resources more efficiently, the problem of provincial protectionism would be overcome. Indeed, if the federal center has enough administrative resources to punish those governors that allow enterprises to avoid tax payment, governors would have to rely more on economic performance (either by increased provision of public goods or diminishing regulation) in order to gain votes. Enikolopov and Zhuravskaya (2003) findings empirically support the above argument. Technically, if the federal center has a more cost-effective technology of fighting provincial protectionism, the less possible is the bad equilibrium. In an extreme case, the center need not rely on the coordination mechanism to combat regions: this is the case there exists p such that $\pi(s^*(p)) < v(\overline{s})$ and $c(p) < t\pi(\overline{s})$ (instead of a more loose condition $c(p) < (N-1)t\pi(\overline{s})$, which allows the governor to exploit the coordination problem).

Proposition 9 *The stronger is the federal center (e.g. the less costly is increasing p_i), the less likely is the protection equilibrium. If the central authority is strong enough, then there is no protection equilibrium at all.*

At the same time, there are countries, where effectiveness of federalism rely on strength of local institutions rather than on power of a central authority (Inman and Rubinfeld, 1998). At least historically, USA is an example of such a country. Technically, if the governor is forced to increase s (intra-regional competition) this provides him with less incentives to protect firms from the federal center. Indeed, if the governor is unable to suppress competition and extract bribes, allowing for more competition becomes a more attractive choice. Although incentives to protect regional enterprises from the federal center remain, they are weaker than otherwise. This might explain why the phenomenon of regional

protectionism is much less important for US, than for other federal countries. To analyze ability of governors to suppress local competition, we add one more parameter.

Proposition 10 *Suppose that there is a monetary cost $m(s)$ associated with restricting intra-regional competition, $m'(s) < 0$, $m''(s) > 0$. The smaller is the governors' ability to suppress intra-regional (industrial) competition (the steeper $m(s)$), the more unlikely is the protection equilibrium.*

A similar message could have been inferred from Proposition 1, which shows that a higher level of political competition inside the region leads to more competition and less protection against the federal center. This gives the federal center an additional instrument for dealing with the governors: the federal center might support governor's rivals, or try to reduce his chances for re-election, e.g. by using the federal prosecutor office.

5   Federalism, Russian Style

Russia has been a federal state since 1992, with 89 sub-federal units (regions). What makes Russian federalism an attractive choice for investigation? Russia provides the possibility for a unique case study: its federalist system started from scratch in 1992, and so initial conditions are easily observable, and the whole development is well-documented. Also, understanding the nature of this development might be more fruitful than in a similar enquiry into the nature of a more mature federalist system, since policy reforms might have much more profound impact. As Djankov and Murrell (2002) say about transition economics in general: "With changes in the institutional and policy environment much faster and more encompassing than in virtually any other historical episode, this is as close to a policy laboratory as economics gets."

What are the specific features of Russian federalism that distinguish Russia from other federal states? First, it is a unique industrial structure, with its large (and thus politically powerful) loss-making enterprises (Ericson, 2000, Roland, 2000, Shleifer and Triesman, 2000, Triesman, 1999). Second, it is the weakness of the federal center and the absence of Russia-

wide political structures.[13] Third, as noted above, it has a short history, and has experienced rapid changes recently.[14]

Since the beginning of transition in 1992, the Russian federalist system has changed a lot (in 1991-1993, the regional governments' share of total taxes increased from 35 percent to more than 55 percent). In 1992-1994, empowering regional political powers and eliminating central government's direct control of regional enterprises was a part of the new Russian leadership's strategy during the initial period of reforms. (On this, see Shleifer and Treisman, 2000.) Ericson (1999) describes the whole process at the regional level as follows: "... the old political elites, and enterprise and farm managements, have largely succeeded in entrenching themselves in both new and surviving economic and political organizations, where they have been joined by a small group of new elite that was able to seize wealth and control of assets in the early wild period of 1989-1993... Licensing and regulatory restrictions site new business initiatives, unless initiated by an elite insider, and existing small and medium business is looked on as a source of continuing rents to be extracted through micro-regulation of activity, multiple fees, and creative taxation by local and regional elites."

Since 1995, the federal center has paid more attention to the economic incentives the federalist system provides. An OECD survey (2000) states: "relatively stable and uniform rules for division of revenue and fiscal authority have replaced the chaotic bilateral bargaining and conflicts of earlier years." Most recently, the Russian government has put an emphasis on additional strengthening of the federal center relative to regional powers.

One particular problem of Russian federalism is regional protectionism. The same OECD report states that "the case of Russian Federation involves the gross violation of virtually all of these conditions [defining a market-preserving federalism], while economic policies

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[13]Before the collapse of the Soviet Union (the state successing the Russian Empire and preceding Russia), there was a unique country-wide political structure, the communist party. Management of each enterprise was directly controlled by the central planning agency (Gosplan) and the party committee of this enterprise. Nowdays, the communist party still has a nation-wide structure and a solid electoral support, but its role as a centralizing force seem to be almost negligible.

[14]It seems possible to extend the logic of provincial protectionism - industrial structure of sub-units determining their relationship with the center - to explain the endogenous disintegration of the Communist Party of the Soviet Union in late 70s - early 80s, that is *before* Gorbachev's reforms. However, this is clearly outside the scope of this paper.

have a reported anti-reformist orientation in many regions." There are a number of recent papers reporting opportunistic behavior by local Russian politicians in their relations with the federal center (e.g., Treisman, 1999, Lambert et al, 2000), and local business (Frye and Shleifer, 1997, Frye and Zhuravskaya, 1999).[15] Litwack (2003) notes that "the various tools and schemes for supporting informal substantial regional and local budgets include extensive bilateral bargaining with large firms for the direct provision of goods and services in return for various benefits, such as tax exemptions, loan guarantees, protection from competition or bankruptcy, debt restructuring, cheap energy inputs, assured safety and supplies of utilities, and freedom from inspections and fines." One empirical fact is that in Russia, huge federal tax arrears have been accumulated by large and productive enterprises in strong regions with governors having huge electoral support (Ponomareva and Zhuravskaya, 2000). The same study finds that local tax agencies make more efforts to collect taxes owed to local authorities rather than the federal center.

An important element of provincial protectionism is subversion of courts, which are formally independent, by regional governors. As a case-study in institutional subversion, Lambert, Sonin, and Zhuravskaya (2000) analyze empirically the causes and consequences of bankruptcies in Russia, and conclude that bankruptcy proceedings are subverted by governors. After a bankruptcy procedure starts, a governor uses his influence over the regional judiciary to appoint management controlled by the regional administration. The second observation is that firms that go into bankruptcy are not inefficient in the technical sense (measured by labor productivity) and many of them have a very high cash flow. Specifically, more than 30 percent of firms have higher costs per ruble of output and about 50 percent of firms have lower labor productivity than the median firm where a reorganization procedure has started. Furthermore, firms being restructured are distributed unevenly across industries. About 80 percent of externally managed firms' output is produced by firms in three industries: oil and gas (54.5), chemical (9.4), and ferrous metallurgy (16.5). For comparison, the output of all firms in these industries accounted for 30 percent of total industrial output. Firms under external management produced 24 percent of output in the oil and gas

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[15]Chapter 6 of Shleifer and Treisman (2000) is the most comprehensive and thorough analysis of Russian federalism's performance .

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industry. Industries in which external management procedures are more frequent are the best-performing in terms of cash flows and technical efficiency.

Slinko *et al* (2003) provides an analysis of empirical predictions of our model. Unlike previous analysis of state capture in transition economies, which was based for the most part on surveys, Slinko *et al* (2003) employ data on preferential treatment at the regional level. In line with our predictions, a key finding is that capture of regional governments by large and inefficient enterprises has adverse effect on small-business development and federal tax collection.

Blanchard and Shleifer (2000) note that Gasprom, a natural gas monopoly effectively controlled by the central government, plays the role of a unionizing structure in the absence of strong party system. The McKinsey report (1999) shows the limits to this argument: In the steel and cement, and confectionery industries, which were case studies in the report, it is found that regional governments often channel implicit federal energy subsidies to companies by letting arrears to federal suppliers accumulate at the local gas and electricity distribution companies. The key ingredient for this scheme to work smoothly is that local energy distribution companies are often under the effective control of regional governments. (As noted in Lambert *et al*, 2000, local energy companies were a prime target of regional administrations in many governor-controlled bankruptcy cases.) The report concludes that "these subsidies slow down recovery in many manufacturing sectors by preventing upgrading investments and industry consolidation in and around the viable industrial assets". Thus, though Gasprom or United Energy Systems play a centralizing role, their role brings additional inefficiency to regional markets.

6   Conclusion

Some general insights might be derived from our analysis. Stability and performance of a federalist system is affected by the industrial structure of constituent units. If local authorities find it profitable to protect enterprises from paying federal taxes, they have more incentives to restrict intra-unit competition to accumulate more rents. Via a coordination effect, such a situation is made self-sustainable. The same logic applies in the case of starting

a federalist system. If the initial rent-holders are strong, the country is likely to end up with a form of peripheralized federalism, and this system is likely to be unfriendly to economic development. The main source of stylized facts for our analysis was Russian and China, although insights obtained here might be applied as well to explain federalism performance in such countries as Argentiana, Brazil, and Mexico.

One problem with our story is that it, unlike most traditional federalist theories, does not explicitly assume resource mobility. However, it does provide insights for an environment with mobile factors. Indeed, in a bad equilibrium, enterprises have few incentives to move to another region, since in other regions competition is also suppressed. Treisman (2000) builds a federalist theory, assuming from the very beginning that provinces compete in protection from the federal state. Our model allows us to study inter-regional competition in protection and obtain results similar to Treisman (2000). An important advantage of our model is that our story allows us to make the governor's choice of whether or not to protect enterprises endogenous.

Blanchard and Shleifer (2000) argue that Russia's (as compared to China's) transition story proves that political centralization matters for a federal structure to be efficient (as was suggested by Riker, 1964). In this paper, we demonstrate that the industrial structure inherited from Soviet times undermines political centralization in Russia and precludes federalism from providing correct incentives to politicians, both local and central, and managers of industrial enterprises. In contrast, in China, political centralization reduces regional administration incentives to protect firms from the federal center. At the same time, there is no incentive to reduce market competition, since there are no large local monopolies to extract rents from. In Russia, there are disincentives to soft-budget constraint elimination, since a firm might use excess employment as a substitute for a payment for protection. Since excess employment is likely to be in old enterprises, governors keep old enterprises and restrict entry of new ones.

Alesina (2003) (see also references therein) analyses determinants of size of countries and its role in economic development. It is argued that a major cost of increasing the size of a countries is heterogeneity between the (would be) constituent units. Our analysis is complimentary to this insight: in the short-run, our logic suggests that the industrial structure of

provinces determine their political structure and relationship with the federal center. However, there is little doubt that in the long-run the influence of the industrial structure on the political structure is not one-way. For an example related to our main story, recent studies of China's industry cite negative influence of emerging provincial protectionism. China Security Commission Report to the US Congress (2002) considers provincial protectionism (which is a manifestation of the center's inability to efficiently oppose emergence of trade barriers across provinces) as a major obstacle to China's efforts to fulfill its World Trade Organization obligations. Although our model does allow to analyze dangers of these developments, it does not provide a formal study of federalism dynamics, which is a topic for future research.

REFERENCES

Alesina, A. (2003) The Size of Countries: Does It Matter? *Journal of the European Economic Association*, forthcoming.

Alesina, A., Angeloni, I. Etro, F. (2001) Institutional Rules for Federations, *NBER Working Paper*.

Alexeev, M. and Kurlyandskaya, G. (2003) Fiscal federalism and incentives in a Russian region, *Journal of Comparative Economics*, forthcoming.

Blanchard, O. and Kremer, M. (1997) Disorganizationr, *Quarterly Journal of Economics*, 112-4, 1091-1126.

Blanchard, O. and Shleifer, A. (2000) Federalism with and without Political Centralization. China versus Russia, *IMF Staff Paper*.

Berkowitz, D. and Li, W. (2000) Tax Rights in Transition Economies: A Tragedy of the Commons, *Journal of Public Economics*, 76, 369-97.

Bolton, P. and Roland, G. (1997) The Breakup of Nations: A Political Economy Analysis, *Quarterly Journal of Economics*, 112-4, 1057-1090.

Careaga, M. and Weingast, B. (2000) The Fiscal Pact with the Devil: A Positive Approach to Fiscal Federalism, Revenue Sharing and Good Governance, mimeo.

de Figueredo, R. and Weingast, B. (2001a) Pathologies of Federalism, Russian Style: Political Institutions and Economic Transition, mimeo.

de Figueredo, R. and Weingast, B. (2001b) Constructing Self-Enforcing Federalism in the Early United States and Modern Russia, mimeo.

Enikolopov, R. and Zhuravskaya, E. (2003) Influence of Political Institutions on the Effect of Decentralization, CEFIR mimeo.

Ericson, R. (2000) Industrial Feudalism, *Russian Crisis and Its Effects,* Kommulainen, T. and Konhonen, I, eds. Helsinki: Kikimora Publications, 133-166.

Friebel, G. and Guriev, S. (2001) Should I Stay or Can I Go? Worker Attachment in Russia, CEFIR mimeo

Frye, T. and Shleifer, A. (1997) The Invisible Hand and the Grabbing Hand, *American Economic Review Papers and Proceedings*, 87, 2, 354-58.

Frye, T. and Zhuravskaya, E. (2000) Private Protection and Public Goods: The Role of Regulation, *Journal of Law, Economics, and Organization.*

Inman, R. and Rubinfeld, D. (1998) Rethinking Federalism, *Journal of Economic Perspectives*, 11(4), 43-64.

Lambert, A., Sonin, K., and Zhuravskaya, E. (2000) Capture of Bankruptcy: Theory and Evidence from Russia, CEPR Working Paper N 2488.

Montinola G., Qian, Y., and Weingast, B. (1995) Federalism, Chinese Style: The Political Basis for Economic Success in China, World Politics, 48(1), 50-81.

McKinsey (1999) Russia's Economic Performance, report.

Litwack, J. (2003) Central Control of Regional Budgets: Theory with Applications to Russia, *Journal of Comparative Economics,* forthcoming.

OECD (2000) Economic Surveys: Russian Federation.

Ponomareva, M. and Zhurvaskaya, E. (2000) Federal Tax Arrears: Liquidity Problems, Federal Subsidies, or Regional Protection?, CEFIR mimeo.

Prud'homme, R. (1995) On the Dangers of Decentralization, *World Bank Research Observer*, 10 (2), 201-26.

Qian, Y. and Roland, G. (1998) Federalism and the Soft Budget Constraint, *American Economic Review*, 88 (5), 1143-1162.

Qian, Y., Roland, G. and Xu, C. (2000) Coordinating Changes in M-Form and U-Form Organizations, mimeo.

Qian, Y. and Weingast, B. (1997) Federalism as a Commitment to Preserving Market Incentives, *Journal of Economic Perspectives,* 11 (4), 83-92.

Roland, G. (2000) *Transition and Economics: Politics, Markets, and Firms,* MIT Press, Cambridge, MA.

Slinko, I., Yakovlev, E., and Zhuravskaya, E. (2003) Institutional Subversion: Evidence from Russian Regions, CEFIR mimeo.

Shleifer, A. and Treisman, D. (1999) *Without a Map: Political Tactics and Economic Reform in Russia,* MIT Press.

Shleifer, A. and Vishny, R. (1994) Politicians and Firms, *Quarterly Journal of Economics,* 4, 995-1025.

Stiglitz, J. and Qian, Y. (1996) Institutional Innovations and the Role of Local Government in Transition Economies: The Case of Guangdong Province of China", in John McMillan and Barry Naughton, eds., Reforming Asian Socialism: The Growth of Market Institutions. The University of Michigan Press, 175-193.

Tanzi V. (2000) Some Politically Incorrect Remarks on Decentralization and Public Finance, in *Governance, Decentralization and Reform in China, India and Russia,* J.-J. Dethier eds., Kluwer Academic Publishers.

Tomassi, M., Saiegh, S., and Sanguinetti, P. (2001) Fiscal Federalism in Argentina: Policies, Politics, and Institutional Reform, *Economia,* Spring, 147-201.

Treisman, D. (1999) Tax Evasion and Regional "Fiscal Protection" in Federal States: A Model with Evidence in Russia, mimeo.

Treisman, D. (2000) Fiscal Pathologies and Federal Politics: Understanding Tax Arrears in Russian Regions, mimeo.

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

Weingast, B. (2000) The Theory of Comparative Federalism and The Emergence of Economic Liberalization in Mexico, China, and India, mimeo.

Zhuravskaya, E. (2000) Incentives to Provide Local Public Goods: Fiscal Federalism Russian Style, *Journal of Public Economics,* 76 (3).

APPENDIX

Proof of Proposition 1. The governor's objective function might be written as follows:

$$V(s, k; \gamma, \beta, t, p) = \gamma(\beta t \int_0^k \pi_i(s)di - pk) + v(s),$$

where s, k are choice variables, and (γ, β, t, p) is a vector of parameters. We claim that the function V is quasisupermodular in $(-s, k)$ and satisfies the single-crossing condition in $(-s, k; \gamma, \beta, t, -p)$. (See Milgrom and Shannon, 1994, for definitions and characterizations.) To show this, we note that for a smooth function $\pi_i(s)$, $\frac{\partial^2 V}{\partial s \partial k} = \frac{\partial \pi_k(s)}{\partial s} < 0$, $\frac{\partial^2 V}{\partial s \partial \gamma} = \frac{\partial^2 V}{\partial s \partial \beta} = \frac{\partial^2 V}{\partial s \partial t} = \int_0^k \frac{\partial \pi_i(s)}{\partial s} di < 0$. Also, $\frac{\partial^2 V}{\partial k \partial \gamma} = \frac{\partial^2 V}{\partial k \partial \beta} = \frac{\partial^2 V}{\partial k \partial t} = \pi_k(s) > 0$, and $\frac{\partial^2 V}{\partial k \partial p} < 0$. Finally, $\frac{\partial^2 V}{\partial s \partial p} = 0$. This is sufficient to claim that the function V is quasisupermodular in $(-s, k)$ and satisfies the single-crossing condition in $(-s, k; \gamma, \beta, t, -p)$. Now Theorem 4 at Milgrom and Shannon (1994) yields all our comparative statics results. (Conditions on the choice set structure are satisfied trivially.)

Finally, if $v_1(s)$ is steeper than $v_2(s)$, the first-order conditions for the problem imply that $s_1^* < s_2^*$, and the results above yield $k_1^* > k_2^*$.∎

Proof of Proposition 4. We use the following simple fact: For any $p > 0$, if functions f, g, h are such that $f' > g' > 0$, $f'', g'' < 0$, $f(0) \geq g(0)$, $h'(x) > 0$, $h''(x) < 0$, then

$$x_f^* = \arg\max\{f(x) - h(x)\} > x_g^* = \arg\max\{g(x) - h(x)\}$$

(provided that both x_f^* and x_g^* exist), and $f(x_f^*) - px_f^* > g(x_g^*) - px_g^*$. To prove Proposition 4, we observe that the above conditions are satisfied for $f(k) = \beta t \int_0^k \pi_{Ai}(s)ds$ and $g(k) = \beta t \int_0^k \pi_{Bk}(s)ds$. Indeed, $f'(k) = \pi_{Ak}(s) > g'(k) = \pi_{Bk}(s) > 0$ and $f''(k), g''(k) < 0$ since we assumed that firms are ordered with respect to their profits.∎