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Abstract

In a federation, local policies with inter-regional spillovers depend on the extent and the nature of local capture. Local lobbyists who have multi-regional scope internalize inter-jurisdictional externalities to a larger extent than the lobbyists with interests in a single region. In particular, multi-regional industrial groups lobby for lower inter-regional trade barriers than local industrial lobbies. The results are based on a simple model, case-study evidence, and econometric analysis of micro-level panel data from Russia. Controlling for firm-level fixed effects, the performance of firms increases with an increase in the number of neighboring regions captured by multiregional groups. The paper has implications for international trade: lobbying by multinationals should lead to lower protectionism compared to lobbying by national corporations.

JEL classification: P26, D78, F15, F23

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1 Introduction

Public policies conducted by governments in autonomous jurisdictions—be that sovereign states or sub-national regions of a single country—often impose externalities on other jurisdictions. Examples of such policies include trade restrictions, investment in public infrastructure, and migration regulations. These externalities are argued to be an important reason for creating global governance in the context of sovereign states (e.g., de Scitovszky, 1942) and for centralization in the context of regions within federations (e.g., Musgrave, 1969). There is, however, little empirical research on the determinants of the size of these externalities.

This paper argues that the extent of inter-jurisdictional externalities from policies of jurisdictions' governments crucially depends on the geographical scope of the powerful interest groups in the jurisdictions. In particular, multi-jurisdictional interest groups internalize inter-jurisdictional externalities of local policies to a larger extent than powerful industrial lobbies with interests in a single jurisdiction. For example, import duties set by the sovereign states where powerful industrial lobbies are comprised of multinational corporations are lower than import duties set by the states in which the most powerful interest group is a group of domestic firms with no foreign capital. The states with powerful multinational lobbies may also be less protectionist than states with perfectly accountable, non-captured governments who oppose trade for fiscal reasons or due to terms-of-trade effects. The exact same logic applies to the imposition of barriers to trade between sub-national regions within federations.

The contribution of this paper is empirical: we test for the difference in the effect of the multi-jurisdictional vs. single-jurisdictional scope of politically-powerful lobbyists on inter-regional spillovers. We use panel data on performance of a large (close-to-population) sample of large and medium-size firms in Russia and a unique panel dataset on the regional vs. multi-regional scope of powerful industrial lobbies in the Russian regions. We show that performance of an average firm depends on the presence of powerful regional or multiregional lobbies in the neighboring regions controlling for a wide variety of factors, including firm fixed

effects and macro-economic trends. An increase in the number of regions with governments under political influence of multiregional industrial groups compared to having them being under influence of regional industrial groups has a significant positive effect on performance of firms operating in the same or related industries to the captors of the neighboring regions. Therefore, spillovers from regions captured by multiregional industrial groups are significantly more benign to firms in the neighboring regions compared to spillovers from regions captured by regional industrial groups. We also find some evidence that spillovers from regions where governments are not under special interest influence are less benign than spillovers from multiregionally-captured regions and more benign that spillovers from multiregionally-captured regions. But these latter differences are not statistically significant.

Our empirical analysis focuses on the estimation of the reduced-form relationship between the scope of industrial lobbies in one region and firm performance in other regions. We have no systematic data on the actual policies that generate the estimated spillovers. Instead, we provide anecdotal evidence on the importance on inter-regional trade barriers as a source of spillovers. We consider three case studies to illustrate that regional industrial groups lobby for erecting inter-regional trade barriers, whereas multiregional industrial groups lobby for free trade among regions. In addition, the very same interest groups reversed their stance from protectionist to pro-trade once they became multiregional.

Russia provides an ideal testing ground for the relationship between interest-group politics and inter-regional spillovers for the following reasons. First, during 1996-2003—the period under study—the country was a highly decentralized state in which regional governments had substantial autonomy over public policy. Second, privatization of the early 1990s gave rise to a relatively high concentration of wealth and, as a consequence, high degree of local capture (Grossman and Helpman, 1994, 1995, 2001; Glaeser, Scheinkman and Shleifer, 2003; Sonin, 2003).[1]

[1]Using the dataset on preferential treatments to large firms in Russian regional legislation, which is the main source of information on local capture used in this paper, Slinko, Yakovlev and Zhuravskaya (2005) show that (i) regional legislature is subverted by vested interests in many regions; (ii) political influence generates substantial gains to captor firms; and (iii) the extent of capture has an adverse effect on performance of

Our findings contribute to the literature on political economy of international trade. The first theoretical analysis of the role of multinational interest groups in liberalizing trade dates back to Hillman and Ursprung (1993)[2] but the empirical literature, however, has emerged only recently. Our paper is most closely related to Gawande, Krishna and Robbins (2006) and Kee, Olarreaga and Silva (2004) who use the approach introduced by Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000). In this literature, the relationship between interest groups politics and trade barriers is tested via estimating a structural model using an industry-level cross-section of political contributions, trade barriers, and import penetration shares. The structural model is, in turn, based on the seminal paper by Grossman and Helpman (1994). Gawande, Krishna and Robbins (2006) find that trade barriers in the US industries are negatively correlated with foreign lobbying. Kee, Olarreaga and Silva (2004) focus on lobbying the US government by Latin American countries and find a similar relationship controlling for country and product characteristics. We study related questions using a very different methodology, which has both advantages and drawbacks compared to the standard approach. Unlike the empirical trade literature, we do not have reliable data on trade barriers and, therefore, cannot estimate the structural relationship. Instead, we use a reduced-form approach to measure the impact of lobbying on foreign firms directly without observing variation in trade policy. The main advantages of our approach are as follows. First, we use firm-level panel data and, therefore, are able to control for firm, industry, and region heterogeneity as well as for macroeconomic trends with fixed effects. This is in contrast to the existing literature, which so far has been based on cross-sectional evidence. Second, unlike other papers on this topic, we consider a much more comparable pool of trade partners which allows us to contain the problem of unobserved heterogeneity: despite all the disparities across Russian regions, they are much more homogeneous than sovereign states. Previous literature focused exclusively on foreign lobbying and overlooked the effect of lobbying by multinational corporations; in contrast, we study the difference

firms with no political connections located in the captured regions.

[2]For a more recent theory, see, for instance, Endoh (2005).

in the effects of multi-jurisdictional vs. single-jurisdictional lobbies. Thus, we consider our exercise as a quasi-laboratory experiment for an analysis of the effects of lobbying national governments by multinationals and domestic firms. We contribute to the existing literature by showing that lobbying by multinationals reduces protectionism. This is a complementary finding to that of the existing empirical literature on political economy of trade, i.e., that foreign lobbying reduces barriers to trade.

The paper also contributes to the debate on the benefits and the costs of decentralization (Hayek, 1948; Tiebout, 1956; Riker, 1964; Musgrave, 1969; Oates, 1972; Brennan and Buchanan, 1980). Modern literature is divided on their relative importance in developing countries.[3] Our analysis suggests that the welfare effect of decentralization depends on the nature of local capture. Decentralization is more beneficial when local governments are captured by multi-state business groups compared to when they are captured by groups with interests concentrated in a single state.[4]

The paper proceeds as follows. Section 2 presents a simple theoretical framework and develops empirical predictions. Section 3 provides anecdotal evidence. Section 4 presents the data and empirical methodology. Section 5 presents empirical results. Section 6 focuses on robustness checks. Section 7 concludes.

2 Theoretical framework

The purpose of this section is to formulate testable hypotheses. We present a simple partial equilibrium model that illustrates how the incentives of the captured regional governments depend on the identity of the captors. The model is a straightforward modification of

[3]One strand (see, for instance, Weingast, 1995; Montinola, Qian and Weingast, 1995; Qian and Weingast, 1996; Qian and Roland, 1998) emphasizes the conventional benefits of decentralization, such as better information and stronger accountability at the local level. The other strand (e.g., Tanzi, 1995; Rodden and Rose-Ackerman, 1997; Blanchard and Shleifer, 2001; Cai and Treisman, 2004), in contrast, points out the costs of decentralization such as increased capture of the state by vested interests and lower internalization of inter-jurisdictional spillovers. Bardhan and Mookherjee (2000) study the effect of decentralization allowing for possibility of state capture at both levels of government.

[4]See Khanna and Yafeh (forthcoming in 2007) for a discussion why business groups—that are usually blamed for destroying value in developed economies—may play a useful role in emerging markets.

a standard textbook analysis of an optimal tariff in a large country (e.g., Krugman and Obstfeld, 1991). We focus on inter-regional trade barriers, but the results would hold for any regulation protecting captors from their out-of-region competitors: non-tariff trade barriers, regulation of product, capital, and labor markets, or subsidies. The main idea of the model is as follows: if captors have a stake in firms located outside the region, they are less inclined to lobby for policies with negative externalities on other regions.

2.1 A simple model

We consider a partial equilibrium model of trade. Consider a region which imports a tradeable good from the rest of the country's regions. We will refer to this region as "Home" region and to the rest of the country's regions as "Abroad." Let P and P^* denote the price of the good at Home and Abroad, respectively. The demand for the good at Home is $D(P) = 1-P$; the demand Abroad is $D^*(P^*) = 1 - P^*$. The supply of the good at Home is $S(P) = aP$ and the supply Abroad is $S^*(P^*) = a^*P^*$, where $a^* > a$.[5]

The government of the home region sets τ to maximize the weighted average of consumer surplus of home consumers CS, tariff revenues TR, and producer surplus PS (a la Baldwin, 1987; Bagwell and Staiger, 2006). Grossman and Helpman (1994) provide microfoundations for this utility function.

The tariff revenues and consumer surplus enter the government's objective function with the weight 1 while the producer surplus enters with the weight $\gamma \geq 1$. The parameter γ reflects the extent to which the Home government is under the influence of the local industrial lobby, i.e., domestic producers. If $\gamma = 1$, there is no "state capture" and the Home government maximizes social welfare. We shall assume that the industrial lobby in addition to being an owner of the 100 percent of domestic industry also owns $\mu \in [0, 1)$

[5]This assumption is necessary to generate trade between regions. An alternative would be to consider a differentiated good produced by firms at Home and Abroad, varieties of which are demanded both at Home and Abroad. This model is a straightforward generalization of the model in Hillman and Ursprung (1993) allowing for differentiated goods. This alternative model produces very similar results in terms of our main empirical prediction but requires more complex math. Thus, for the sake of simplicity, we opt for the model with a homogenous good.

share of the firms Abroad. Thus, in the case of local capture, the total producer surplus that belongs to the captors is $PS + \mu PS^*$ and the home-region government maximizes $CS + TR + \gamma(PS + \mu PS^*)$.

The equilibrium conditions (i.e., the law of one price and the market clearing) are as follows:

$$P = P^* + \tau$$

$$D(P) + D^*(P^*) = S(P) + S^*(P^*).$$

Solving for P and P^*, we find $P = \frac{2+\tau(1+a^*)}{2+a+a^*}$; $P^* = \frac{2-\tau(1+a)}{2+a+a^*}$. The imports into the Home region are $D(P) - S(P) = 1 - (1+a)P = \frac{a^*-a-\tau(1+a)(1+a^*)}{2+a+a^*}$. We shall denote the prohibitive tariff level by $\overline{\tau}$:

$$\overline{\tau} = \frac{a^* - a}{(1+a)(1+a^*)}.$$

The Home government chooses the tariff to maximize:

$$W = TR + CS + \gamma\left(PS + \mu PS^*\right) = \tau\left(1 - (1+a)P\right) + \frac{(1-P)^2}{2} + \gamma\frac{aP^2}{2} + \gamma\mu\frac{a^*P^{*2}}{2}. \quad (1)$$

This is a quadratic function of τ; the first order condition implies

$$\widehat{\tau} = \frac{2(1+a^*)(1+\gamma a) - (1+a)(2+a+a^*) - 2\gamma\mu a^*(1+a)}{2(1+a)(1+a^*)(2+a+a^*) - (1+a^*)^2(1+\gamma a) - (1+a)^2\gamma\mu a^*}. \quad (2)$$

The second-order condition is equivalent to both numerator and denominator in (2) being positive (otherwise, the optimal tariff is either prohibitive $\tau = \overline{\tau}$ or trivial $\tau = 0$).

Our main interest is in deriving comparative statics with regard to the extent of capture γ and the weight of multi-regional interests μ. Figures 1 and 2 illustrate the optimal tariff as a function of μ and γ. We summarize comparative statics in the following proposition.

Proposition 1. *The optimal tariff τ is:*

(i) weakly decreasing in the weight of multi-regional interests μ for a given level of local capture γ;

(ii) weakly increasing in γ for a given level of $\gamma\mu$;

(iii) weakly increasing in γ for a given level of μ if μ is sufficiently small: $\mu < \frac{1+1/a^*}{1+1/a}$.[6]

Proof. We shall use monotone comparative statics. The second derivatives of the objective function W with regard to τ and the parameters are as follows:

$$\begin{aligned}\frac{\partial^2 W}{\partial\mu\partial\tau} &= -\gamma a^* P^* \frac{1+a}{2+a+a^*}; \quad \left.\frac{\partial^2 W}{\partial\gamma\partial\tau}\right|_{\gamma\mu=const} = aP\frac{1+a^*}{2+a+a^*};\\ \frac{\partial^2 W}{\partial\gamma\partial\tau} &= aP\frac{1+a^*}{2+a+a^*} - \mu a^* P^* \frac{1+a}{2+a+a^*}.\end{aligned}$$

As $\frac{\partial^2 W}{\partial\mu\partial\tau}$ is negative and $\left.\frac{\partial^2 W}{\partial\gamma\partial\tau}\right|_{\gamma\mu=const}$ is positive, we directly obtain the claims (i) and (ii). The sign of $\frac{\partial^2 W}{\partial\gamma\partial\tau}$ depends on the magnitude of μ. If the extent of multiregional interests is relatively small $\mu < \frac{(1+a^*)aP}{(1+a)a^*P^*}$ then it is positive and the tariff increases with γ. As $P \geq P^*$, the sufficient condition is $\mu < \frac{(1+a^*)a}{(1+a)a^*} = \frac{1+1/a^*}{1+1/a} < 1$. *Q.E.D.*

The intuition is straightforward. For a given level of capture γ, the higher the out-of-region component in the group interests, the more they benefit from tariff reduction. For a given level of their interest Abroad μ, the effect of the extent of capture γ on policy depends on two countervailing forces. On one hand, the lobbies want to restrain competition to increase their domestic producer surplus. On the other hand, the lobbyists want to promote trade to raise their producer surplus abroad. As long as μ is sufficiently small, the first effect dominates.

Remark 1. *The tariff is positive even if there is no capture $\gamma = 1$ and $\mu = 0$. Due to the terms-of-trade effect, the benevolent regional government sets a non-trivial tariff:*

$$\tau_B = \frac{a^* - a}{(3+2a+a^*)(1+a^*)}.$$

If the benevolent government knows that producers have a positive stake $\mu > 0$ in the foreign

[6] This is a sufficient condition. The necessary and sufficient condition is more involved but less restrictive: $\mu < \frac{1+1/a^*}{1+1/a}\frac{2+\tau(1+a^*)}{2-\tau(1+a)}$, where τ is the optimal tariff.

producer surplus then the tariff will actually be lower $\frac{a^*-a-2a^*\mu}{(3+2a+a^*)(1+a^*)-(1+a)a^*\mu}$ *and may even be trivial if* $\mu \geq (a^* - a)/(2a^*)$.

How does the global welfare depend on parameters? It is impossible to provide a complete answer within a partial equilibrium model. Yet, if the region is sufficiently small compared to the whole country, it is clear that eliminating trade barriers increases the welfare. Once we neglect the effect of the policies in a given market on other markets, the global welfare becomes simply $TR+CS+PS+PS^*$ which is maximized at $\tau = 0$. In this sense, multiregional interest groups deliver greater social welfare than local ones.

2.2 Testable predictions

The main prediction of our simple model is that multiregional captors—business groups with special interests that span over several regions—set lower tariffs compared to regional captors (industrial lobbyists with interests only in their home region). In addition, the model predicts that regional captors set higher tariffs than non-captured governments. These two predictions are clear cut and testable.

In general, we cannot generate a prediction with regard to the comparison between non-captured governments and multi-regional capture. Our analysis implies that, for a given level of μ, the tariffs increase with the level of capture γ only if μ is small. Moreover, even though small μ may be a realistic assumption, this prediction is hard to test empirically: we cannot measure (and, therefore, control for) μ in the non-captured regions. To construct a proxy for μ we need to observe regional-vs-multiregional scope of business interests. It is feasible in a captured region where the captors are few and known. In a non-captured region, we would need the data on ultimate ownership of all firms which are not available.

The logic of the model can be generalized to any regional regulation or other regional policy that affects business interests and imposes inter-jurisdictional externalities. Another example of such a policy is investment in infrastructure that connects different regions, e.g., roads, railroads, or communications. (In particular, vertically-integrated groups may

lobby for building public roads to connect their production units. Naturally, multiregional industrial groups would lobby for better roads compared to regional groups; other firms located along the road would also benefit.) When lobbying for regional policies, multiregional industrial groups should internalize inter-jurisdictional spillovers to a larger extent than regional lobbies. Therefore, we expect to see relatively low negative spillovers and relatively high positive spillovers from regions captured by multiregional industrial groups than from regions captured by regional industrial groups.

In this paper we abstract from the question of how the (multiregional vs. regional) type of capture affects domestic non-captors. Our theory does not produce a clear prediction which would hold for different kinds of public policy. On the one hand, domestic firms benefit from local lobbies restricting competition from outside the region (for this reason, they would prefer regional to multiregional capture). On the other hand, the multiregional lobbies promote infrastructure investment that can help domestic firms export abroad (for this reason, they would prefer multiregional to regional capture). Note that, in contrast to domestic firms, for the foreign firms these two effects work in the same direction.

Since we do not have data on regional trade barriers and there are other policies with inter-regional spillovers, we test the predictions of the model directly, i.e., by estimating the effect of capture on the very spillovers rather than the effect on trade barriers. Our tests estimate the effect of all policies that have regional spillovers on firm performance. Trade barriers, however, are an important policy that imposes inter-jurisdictional externalities. In the next section, we provide anecdotal evidence on how regional trade policies fit the model.

3 Case study evidence on trade barriers

Inter-regional trade barriers are a pervasive phenomenon for many large developing and transition countries. For example, Young (2000); Poncet (2004) provide many anecdotes as well as systematic evidence of inter-provincial barriers in the transitional China. In

Russia, media provides numerous stories in which vodka-producing regions institute barriers to trade in regional alcohol markets. For example, in the late 1990s, republic of Udmurtia, Riazan oblast, Astrahan oblast, and Yakutia republic passed regional laws that obliged alcohol retailers to have at least a certain percent of their sales be from products produced by local alcohol producers (e.g., 80% in Yakutia republic); whereas Vladimir oblast, Saratov oblast, and Penza oblast maintain sizable tariffs on vodka produced outside of these regions.[7] Berkowitz and DeJong (1999) show that the patterns of price dispersion in Russia suggested the existence of substantial interregional trade barriers in 1990s. Inter-regional trade barriers arise in developed countries as well; see, for instance, Craig and Sailors (1987) on trade restrictions among the US states and a report of the Canadian Chamber of Commerce (CCC, 2004) on inter-provincial trade barriers in Canada. Below, we consider three case studies from Russia to illustrate the main prediction of the model.

3.1 Uralelektromed

Uralelectromed is the largest copper refinery in Russia; the only copper refinery and the fourth largest company in Sverdlovsk Oblast, a region in the Urals in Russia. Uralelectromed was politically very powerful in Sverdlovsk Oblast throughout the 1990s. In the spring of 1996, it successfully lobbied for introducing a regional export tariff on products containing precious metals which are its main input. The tariff significantly hurt the neighboring Cheliabinsk Oblast, since its main copper refinery—Kyshtymsky copper-electrolytic plant—relied on inputs produced in Sverdlovsk Oblast by Sredneuralsky copper-melting plant. After the introduction of the tariff, Uralelectromed became the only profitable customer of Sredneuralsky. At the time, Iskander Makhmudov, the controlling owner of Uralelectromed, did not own other assets. In the second half of 1996, Iskander Makhmudov started building a vertically-integrated copper group which had later become one of the largest Russian business groups UGMK (Guriev and Rachinsky, 2005). Once the Makhmudov's group grew beyond

[7]The source of these data is the comprehensive database of regional laws and regulations in Russia, "Consultant Plus" (www.consultant.ru).

Sverdlovsk oblast, the export tariff on products containing precious metals was abolished.[8]

3.2 Tatneft vs. Lukoil

Throughout the second half of 1990s and in the beginning of 2000s, Tatarstan Republic, a Russia's region on the Volga river, witnessed a major conflict of lobbyists over tariff restrictions on gasoline imports into the region. The two main players in this conflict were Tatneft, the fourth largest oil company in Russia with all major assets located in Tatarstan, and Lukoil, the largest oil firm in Russia at that time with extraction plants and refineries located in many regions. In 1998, active lobbying by Tatneft (the most powerful firm in the region's politics) led Governor Shaimiev to prepare a decree that aimed at severely restricting gasoline imports into Tatarstan. To prevent the decree from taking effect, Lukoil threatened Governor Shaimiev with stopping to refine Tatneft's oil. Tatneft did not have its own oil refinery then. The decree was not passed. In 2000, Tatneft built its own refinery and, therefore, could no longer be threatened. As a result, it successfully lobbied for an institution of gasoline import restrictions. Having no more leverage inside the region, Lukoil had to complain to Sergei Kirienko, the Russian President's Plenipotentiary in the Volga region about these trade restrictions. Since obstruction of inter-regional trade contradicts federal law, the federal government abolished the restrictions. Only the direct intervention of the federal government relaxed the gasoline import duties in Tatarstan.[9]

3.3 Russia's Beer

In 1996-2002, beer was produced in 72 to 76 (depending on a year) out of 89 regions of Russia. The industry consisted of the two market leaders, Baltic Beverages Holding (BBH) and Sun Interbrew and *hundreds* of small regional breweries.[10] BBH and Sun Interbrew

[8]For the account of this story, see, for instance, *Segodnia* (October 4, 1996).

[9]For the account of this war, see, for instance, *Russky Telegraph* (July 28, 1998) and *Vecherniaya Kazan* (October 4, 2002).

[10]Sun Interbrew was formed in 1999 after the merger of Sun Breweries and Interbrew; before 1999, Sun Breweries was one of the two market leaders. Other large producers, e.g., Efes, SABMiller, or Heineken, had

had production facilities in 13 regions (7 and 9, respectively). Regional breweries targeted exclusively local markets and lobbied regional governments to erect barriers for import of beer produced outside their region. BBH and Sun Interbrew, on the other hand, were not interested in erecting trade barriers even in the regions where they had production plants because of product differentiation: Typically, a regional branch of BBH or Sun Interbrew brewed some of group's national brands and few local brands some of which were subsequently marketed to become national brands.[11] In order to take advantage of the economies of scale in production and marketing, BBH and Sun Interbrew moved away from duplicating brands at the plant level and preferred to ship the products to other regions (even those regions where they had own production facilities). Regional governments' main instrument for restriction of beer imports from other regions was the legislation on "licensing and accreditation" of beer retailers. Often, these laws included provisions restricting sale of beer produced in other regions of the country.

Yakovlev (2005) coded the content of the regional licensing and accreditation laws for 75 regions between 1996 and 2003, i.e., 600 region*year observations.[12] Out of these 600 region*year observations, multiregional beer producers had operational production facilities in 78 cases. In 65 out of 600 cases, the laws erected severe trade barriers for beer imports. It is striking that in the regions and years when a multiregional beer producer was present, regional laws *never* stipulated trade restrictions.

One may argue that the causality between the presence of multiregional brewing companies and regional trade barriers works in the opposite direction: multiregional groups may not able to enter regions where local breweries are successful lobbyists. To address this, let us consider trade barriers which were introduced after both BBH and Sun-Interbrew established plants in all 13 regions of their current presence. Between 1999 and 2003, 7 out of

little presence in Russia before 2002.

[11] A good example of a local brand that later became one of the national champions is Sun-Interbrew's "Sibirskaya Korona." It was launched as a local brand in Omsk but now sells throughout the country.

[12] The dataset excludes war-affected Chechnya and Ingushetia and so-called autonomous okrugs which are parts of other regions; data on the autonomous okrugs are very scarce.

62 regions which had no multiregional companies, introduced new import restrictions. In contrast, *none* of the 13 regions which had production plants of BBH and Sun-Interbrew did this.

Discussion

All the three pieces of anecdotal evidence are consistent with the model: trade restrictions arise in regions were politically-powerful lobbyists have their business interests concentrated within regional borders and do not arise where lobbyists' interests span over multiple regions. Even in the Tatneft case where Tatneft initially did not own the assets outside its home regions, reliance on an independent refineries in other regions forced it to care for the interregional trade and to act as a multiregional firm.

In the remainder of the paper, we test whether there is a systematic difference in spillovers from the regions captured by regional industrial interests, the regions captured by multiregional industrial interests, and the non-captured regions.

4 Empirical methodology and the data

4.1 Data

For each region in Russia in each year between 1996 and 2003, we construct a variable which indicates whether the region was captured by a regional industrial group, captured by a multiregional industrial group, or non-captured using data from three sources.

1. We draw information on the extent of local capture and the names of firms that were local captors from the dataset on preferential treatment of large firms by regional legislation constructed and described by Slinko, Yakovlev and Zhuravskaya (2005).

2. We identify whether in 2003 local captors belonged to an industrial group that had regional or multiregional scope using data on industrial groups collected and described

by Guriev and Rachinsky (2005). For each large firm in Russia, the dataset identifies the ultimate controlling owner in 2003. The data allow us to track whether the most politically-powerful firms in each region—who are the recipients of preferential treatments in Slinko, Yakovlev and Zhuravskaya (2005) dataset—belonged to a controlling owner who had productive assets in multiple regions or in a single region.

3. Since data from Guriev and Rachinsky (2005) are a cross-section, we collected additional time series information on controlling owners of each firm-captor (i.e., each recipient of preferential treatment) between 1996 and 2003 using "Labyrinth" dataset that contains detailed histories of most large Russian companies.

We relegate the detailed description of each of these three dataset to the Appendix.

A region in a particular year is defined to be captured by an interest group of a particular type–regional or multiregional–whenever: (i) the region is captured, i.e., the number of preferential treatments given out to firms in that region and that particular year is greater than zero; and (ii) at least 50% of all preferential treatments go to firms controlled by groups of a particular type, i.e., regional or multiregional. A region in a particular year is said to be not captured if there were no preferential treatments that year in that region. Table A.1 in the Appendix presents the lists of regions by type of their captor over time.[13] There are 103 cases (i.e., regions*years) of multiregional capture, 285 cases of regional capture, and 200 cases of no capture.

We concentrate on estimating spillovers from neighboring regions. Thus, for that purpose, for each region, we construct variables measuring the total number of neighboring regions and the numbers of neighboring regions that are (i) captured by regional groups, (ii) captured by multiregional groups, or (iii) non-captured. Table A.2 in Appendix presents these data.

We are interested in how spillovers from regional policies affect performance of an average firm. The outcomes that we look at are growth in sales, productivity, employment, fixed as-

[13]We are unable to classify several regions according to the type of capture because these regions are missing from the Slinko, Yakovlev and Zhuravskaya (2005) dataset due to the absence of information about laws of these regions in the legal database "Consultant Plus."

sets, and return on sales (controlling for firm fixed effects and industry-specific time trends). The data on these basic performance indicators for 1995-2004 come from the Russian Enterprise Registry Longitudinal dataset (RERLD) which covers the basic financial statistics for about 80% of large and medium-size firms in Russia. Summary statistics for performance variables are presented in Table A.3 in Appendix.

4.2 Empirical specification

Our aim is to estimate how the extent of inter-jurisdictional spillovers depends on the scope of local special interests. The estimation strategy is as follows: we compare the average performance of firms depending on whether neighboring regions are (i) captured by regional groups, (ii) captured by multiregional groups, or (iii) non-captured controlling for firms' fixed effects and other covariates (to be described below). If multiregional groups internalize inter-jurisdictional externalities to a larger extent than regional groups, firm performance should be higher under multiregional capture of the neighboring regions.

We look at the capture in the neighboring regions because we assume that spillovers are higher between neighbors than between regions that are far away from each other. This is true both for trade and for infrastructure externalities. For example, if inter-regional trade barriers are the source of spillovers, gravity model (Linnemann, 1966) would predict higher effect on immediate geographical neighbors.

As our model is a partial equilibrium one, all predictions of the model are about the spillovers on firms in the same or related industries to the industry of the captors. The multiregional captor would lobby for more benign regulation towards the same industry, if she has a stake in firms in that industry, or towards the industries she trades with, if the captor is vertically integrated as most of Russian industrial groups are (see Guriev and Rachinsky, 2005). It is important to emphasize that we assume that policy and, therefore, its spillovers are industry-specific rather than firm-specific. Under this assumption, captors cannot design regulations that would benefit only their foreign subsidiaries; they can only

reduce tariffs or relax regulations that hurt all the firms in the targeted industry. We define firm f to have a "related" industry to the industries of the firms-captors of the neighboring regions if the f's industry has sufficiently high volume of trade with at least one of the industries of the neighboring captors or the f's industry is the same as of at least one of the neighboring captors. The information on trade between industries is from the two-digit industry-level input-output table (constructed by the official Russia's statistical agency, Rosstat using Rosstat's OKONH industry classification). We estimate the spillover effects on both "related" and "unrelated" industries.

Using a representative sample of large and medium-size registered firms in Russia, we estimate the following panel regression with fixed effects for each firm:

$$Y_{ft} = \phi_f + \rho_t + \alpha_1 C_{rt}^{MR} + \alpha_2 U_{ft} C_{rt}^{MR} + \alpha_3 C_{rt}^{NO} + \alpha_4 U_{ft} C_{rt}^{NO} + \alpha_5 U_{ft} + \alpha_6' \mathbf{X}_{rt} + \alpha_7' \mathbf{Z}_{ft} + \varepsilon_{ft}, \quad (3)$$

where f indexes firms; r indexes regions in which firm f is located; t indexes years; ϕ_f and ρ_t are the firm and time fixed effects, respectively.

The dependent variable, Y_{ft}, is one of the following measures of performance: logs of productivity, return on sales, fixed assets, employment, and sales. The main independent variables are: C_{rt}^{MR}, which is the number of neighboring regions of the region r that are captured by multinational groups; C_{rt}^{NO}, which is the number of neighboring regions of the region r that are not captured; U_{ft}, which is a dummy indicating whether the firm f's industry is unrelated to the industries of firms who are the captors of the neighboring regions; and the interaction terms between the "unrelated industry" dummy, U_{ft}, and "type of neighboring capture" variables, C_{rt}^{MR} and C_{rt}^{NO}.

Thus, α_1 estimates the effect of an increase in the number of neighbors captured by multiregional groups on performance of an average firm in an industry related to industries of the neighbor's captors. And α_2 estimates the difference between the effects of an increase in the number of neighbors captured by multiregional groups for firms in unrelated and related industries. Our main hypothesis in terms of estimated coefficients is as follows:

$\alpha_1 > 0$, i.e., the higher the multiregional scope of lobbyists in the neighboring regions, the better the performance of firms in related industries. In addition, for trade-related externalities, we expect the effect of an increase in multiregional lobbying of neighboring regions to be weakened for firms in unrelated industries, i.e., $\alpha_2 < 0$ (since spillovers reach firms in "unrelated" industries only indirectly through capital and labor markets, rather than through product markets).

Similarly, α_3 and α_4 estimate the effect of an increase in the number of non-captured neighbors on performance of an average firm in related industry and the difference in the effect of an increase in the number of non-captured neighbors for firms in unrelated and related industries. Again, we expect $\alpha_3 > 0$ and, possibly, $\alpha_4 < 0$.

Notice that the estimated effects are relative to having neighbors captured by regional groups because we look at the effect of an increase in the number of multiregionally-captured neighbors holding the number of non-captured neighbors constant and, vice versa, we look at the effect of an increase in the number of non-captured neighbors holding the number of multiregionally-captured neighbors constant. The total number of neighbors is controlled for by firm-fixed effects as firms do not change location in our data.

We include several firm-level and region-level covariates denoted by $\mathbf{Z}_{ft}$ and $\mathbf{X}_{rt}$, respectively. Vectors $\mathbf{Z}$ and $\mathbf{X}$ include the following regressors. We control for industry-specific trends with interactions of linear time trends with industry dummies. To make sure that our results are not driven by the differences in industrial structure of regions that are captured by regional and multiregional groups, we include controls for the shares of total regional industrial production produced by machinery, electricity, extraction, and food industries both for the region r and its neighbors. We control for the extent of local capture in the neighboring regions of region r with the mean number of preferential treatments and mean concentration of preferential treatments among the neighbors as was done in Slinko, Yakovlev and Zhuravskaya (2005). Since performance of firms may be influenced by the extent and type of local capture in their own region, we control for the number of preferential treatments

in region r as well as their concentration and multiregional vs. regional type. We allow for clusters in error terms at the level of regions. Finally, we drop outlier-observations from the sample defined as observations with residuals of performance of firms on our control variables which are above the 99th or below the 1st percentile of their distribution.

It is important to note that our estimation strategy treats the type of capture of the neighboring regions as exogenous to performance of an average firm. We are comfortable with this assumption because the allocation of preferential treatments in a region depends on what is going on in that region and certainly not on performance of firms outside that region. The results are robust to exclusion of control variables that describe the region r (which, therefore, potentially can be endogenous to firm performance in the same region). In section 6, we discuss potential alternative stories and robustness of the results to alterations in the set of covariates.

In addition, it is worth noting that we do not estimate the effect of capture on the captors themselves; using the very same dataset, Slinko, Yakovlev and Zhuravskaya (2005) have shown that captors do benefit from the capture. For clarity's sake, we exclude the captors from our sample.

Specification (3) explores within-region variation in the identity of industrial lobbies because it includes fixed effects for firms and, therefore, also fixed effects for regions as firms in our sample do not change location. The advantages of running panel regressions with fixed effects are obvious compared to cross-sectional regressions. Yet, cross-sectional variation in regional vs. multiregional scope of local capture is vast. Thus, we want to verify whether our main results hold in cross-section as well. For that purpose, we run the following between-effects regression, i.e., OLS regression of de-trended over-time averages, controlling for the initial level of dependent variable:

$$\bar{Y}_f = \alpha + \alpha_0 Y_{f_{t=1995}} + \alpha_1 \bar{C}_r^{MR} + \alpha_2 U_f \bar{C}_r^{MR} + \alpha_3 \bar{C}_r^{NO} + \alpha_4 U_f \bar{C}_r^{NO} + \alpha_5 U_f + \alpha_6' \tilde{\mathbf{X}}_r + \alpha_7' \tilde{\mathbf{Z}}_f + \varepsilon_f. \quad (4)$$

The upper bar denotes over-time averages between 1996 to 2003 of the residuals from linear

regressions of the corresponding variables (described above) on time dummies.[14] In order to look at changes in performance, we include the initial level of the dependent variable, $Y_{f_{t=1995}}$, as one of covariates. U_f is a dummy that indicates whether the firm f is in the industry which is unrelated to any captors in the neighboring regions throughout the whole period 1996-2003. The set of controls ($\tilde{\mathbf{Z}}$ and $\tilde{\mathbf{X}}$) includes over-time averages of covariates used in specification 3 and, in addition, the following cross-sectional controls: the number of neighboring regions, average exposure of the region r to trade (measured by the average share of exports plus imports in total industrial output), dummy for state ownership of the firm f, the initial share of people with higher education in region r and its initial gross-regional product per capita, a dummy indicating whether the region r has a special "ethnic republic" status in the federation, and 3-digit industry dummies. In addition, in regressions for productivity and return on sales we control for the size of firms with contemporary sales, as productivity and profitability vary a lot with size. As above, we adjust standard error to allow for cluster in error terms at the level of regions.

5 Empirical results

The results of the fixed-effects regressions are presented in Table 1. Our main hypothesis is supported by the data. A change from regional to multiregional capture of a region is associated with higher firm performance in other regions. The estimates of the coefficients on the number of neighbors captured by multiregional groups are positive and significant for all performance measures except the return on sales. In particular, an increase in the number of neighboring regions captured by *multiregional* groups by one (equivalent to a decrease in the number of neighboring regions captured by *regional* groups by one) leads to the following statistically significant changes in the performance of an average firm in an industry related to industries of the captors in an average region: it experiences a 1.3% productivity increase,

[14] Thus, as above, $\bar{Y}$ stands for the level of sales, employment, return on sales, and productivity. In contrast to the level of fixed assets used in specification 3, in specification 4 we use annual change in assets to reflect differences in investment patterns.

a 2% increase in sales, a 1.4% increase in employment, and a 1.5% increase in fixed capital stock. The effect on returns on sales is much smaller, negative, and insignificant; but this variable is based on the accounting profits data, which are believed to be unreliable.

In contrast, there is no significant and robust effect of a change in the type of capture in the neighboring regions on firms operating in unrelated industries. (The difference between the effects for firms in related and unrelated industries, α_2, is negative for four out of five outcome variables and statistically significant for productivity and sales. As the sum of the coefficients α_1 and α_2 shows, in most cases the own effect on unrelated industries is insignificant and close to zero.)

Unlike the multiregional capture of neighbors, an increase in the number of non-captured neighbors (holding the number of multiregionally-captured neighbors constant) does not result in a significant boost in firm performance. The sign of the estimates of four out of five coefficients on the number of non-captured neighbors is positive indicating that spillovers from non-captured regions are only insignificantly better than from regionally-captured regions. As above, there is no robust pattern for the effect of an increase in the number of non-captured neighbors for firms in unrelated industries.

In most cases, the magnitude of the effect of an increase in multiregionally-captured neighbors is larger than that of an increase in non-captured neighbors; yet, the difference in magnitude is statistically significant only for the effect on employment.

Overall, as predicted by our simple model, we find that spillovers from regions with multiregional interest groups are significantly more benign than from regions with interest groups that have interests in a single region.

We also find suggestive evidence that positive spillovers from non-captured regions are larger than that of regionally-captured regions and smaller than multiregionally-captured regions. The latter result is consistent with evidence on China presented by Young (2000) and Poncet (2004). These papers argue that Chinese province leaders erect inter-province trade barriers to protect their own rents (as opposed to rents of industrial lobbies). Partic-

ularly, Poncet shows that regional protectionism is partly explained by political incentives of provincial governments to maximize tax collection and to avoid social unrest from closing down inefficient local firms (a la Shleifer and Vishny, 1994). It is important to note that there is no clear prediction for the difference between the effects multiregionally-captured and non-captured neighbors (see the discussion in Section 2.2).

The results of between-effects regressions are presented in Table 2. Again, we find that spillovers from regions captured by multiregional groups are significantly more benign to firms in related-to-captors industries in the neighboring regions compared to spillovers from regions captured by regional groups. There is no effect on firms in unrelated industries. Thus, the main prediction of our model is confirmed by cross-section estimates as well as by panel estimates. The magnitude of cross-sectional estimates of the effects is larger: an increase in the average share of multiregionally-captured neighbors leads to a 16% increase in productivity, a 27% increase in sales, a 14% increase in investment, 13% increase in employment, and 5% increase in return on sales in firms operating in related industries. This increase in magnitude of coefficients should be expected. The between-effects specification provides estimates for the long-run effect of spillovers in contrast to the fixed-effects estimates which are for the short-run effects. In the fixed-effects regressions we look at the annual changes in the type of capture and in firm performance, whereas in between effects estimation, we look at the eight-year-long horizon.

As our model predicts, the estimated spillovers from regions that are not captured are significantly more benign than spillovers from regions captured by regional industrial groups. In contrast to fixed-effects estimation, this difference is statistically significant. In addition, the estimated coefficients of the effect of an increase in the share of non-captured neighbors turns out to be larger in magnitude than the effect of an increase in the share of multiregionally-captured neighbors, but that latter difference is statistically insignificant.

Overall, we find strong support for our main hypothesis.

6 Robustness

In this section we consider robustness of our results and possible alternative explanations for them.

One could argue that multiregional and regional captors are different in other dimensions in addition to geographical scope of their interest and that our results are driven by those very differences.

First, could it be that multiregional and regional groups have different capacity of influencing regional authorities, i.e., political power of these two types of lobbyists differ? To address this question, we compared the number of preferential treatments received by all firms in regional and multiregional groups from the Guriev and Rachinsky (2005) dataset. It turns out that likelihood of getting treated preferentially by regional authorities does not depend on whether a firm in controlled by a multiregional or a regional group. The main predictor of whether a firm is treated preferentially is its size. We also checked that the interaction between the size of the firm and the multiregional vs. regional scope of the controlling owner of the firm does not have any predictive power for the likelihood of being treated preferentially. Moreover, in our regressions we always control for political power of lobbyists with the average number and average concentration of preferential treatments among neighbors.

Second, multiregional and regional lobbyists may not be uniformly distributed across different industries, whereas different industries may have different spillover effects. For example, being located next to a region that produces cheap hydro electricity may be beneficial for power-intensive manufacturing firms. Indeed, it turns out that there are important differences in industrial composition of captors who are members of multiregional groups vs. regional groups: multiregional owners are prevalent among captors from non-ferrous metals, coal, and diamond industries, whereas regional owners are prevalent among captors from machinery, timber, and food industries. (Captors in other industries do not significantly differ by multiregional vs. regional type of their owners.) To control for the potential industry-

related spillover effects, we include industrial composition of the neighboring regions and of the own region into our baseline regressions. It is worth noting, however, that most of the industry effects are picked up by firm-level fixed effects and, therefore, our estimates of fixed effects regressions do not depend on the presence of these controls. In between effects specification, however, these controls are important and they are included.

Another possible alternative story behind our results is as follows. When a member of a group receives preferential treatment, the benefits of this preferential treatment may be spread among all members of the group. Therefore, firms-members of multiregional groups, other members of which receive preferential treatment in the neighboring regions, may enjoy benefits of these preferential treatments. In order to rule this out as a possible driving force of the results, we excluded members of groups (other members of which are captors) from the sample. This did not have any effect on our results. One could argue, however, that preferential treatment given to members of a group may not only have a direct effect on other members of the same group located in other regions but also hurt their competitors (which are also located in other regions). To address this, we tried including a dummy that equals one if the region has firms-members of multiregional groups that capture neighboring regions. Addition of this covariate also did not change our results. It is worth noting that this story (if important) would bias out coefficients downwards, and, therefore, work against our predictions.

We also tried to include many other control variables for the own region and neighboring regions. In particular, the exclusion of all controls for own region—which may be endogenous to firm performance in the region—does not change the main results. Overall, the results seem to be very robust to any alterations in the set of covariates.

7 Conclusions

Our main finding is that in a federation, local public policy with inter-jurisdictional spillovers depends on whether business interests of local lobbies span over many regions or are concentrated in a single region. Multi-jurisdictional lobbies internalize spillovers between jurisdictions to a larger extent than the local lobbies. We show that performance of an average firm significantly improves if neighboring regions are captured by multiregional (compared to regional) industrial lobbies. Regions with governments not captured by any industrial interests generate spillovers that are in between the ones from regions captured by regional and multiregional interests; yet, these differences are not statistically significant.

The results suggest that political influence of large (multi-jurisdictional) businesses may help alleviating one of the main costs of decentralization in large federations—inter-jurisdictional spillovers—particularly, when there are no institutional constraints on behavior of local public officials such as strong national political parties (Riker, 1964), as is the case in Russia.

Our findings also have implications for the political economy of international trade. Countries where trade policy is shaped by multinationals are more likely to internalize international externalities and therefore be less protectionist. There are obvious differences between interregional trade in a federation and international trade; yet, the former provides a robust testing ground for the latter. While cross-country analysis suffers from the biases due to inconsistencies of the data and omitted variables, our empirical exercise is set up in a more homogenous environment.

Throughout the paper, we take the structure of lobbies for granted and do not allow for endogenous emergence of lobbies. Future research should analyze political economy of interest group formation taking into account the distinctions between multi-jurisdictional and single-jurisdictional interest groups.

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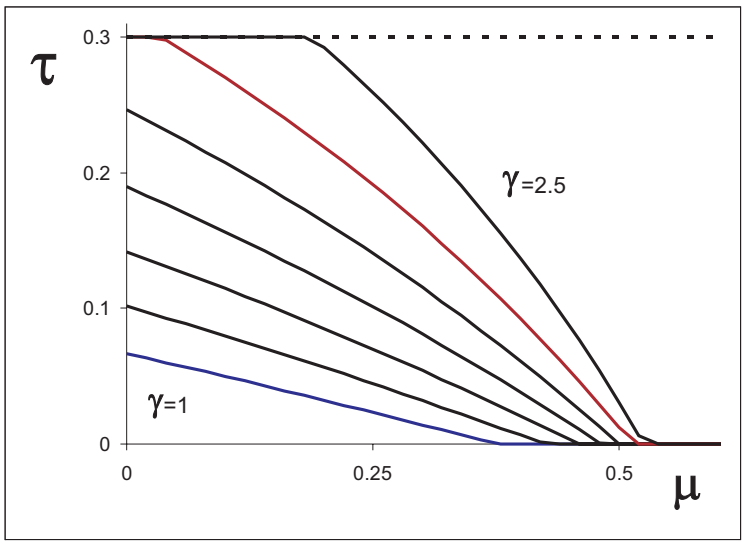

Figure 1: The optimal tariff τ as a function of the weight of multi-regional interests μ for the degree of capture γ increasing from $\gamma = 1$ to $\gamma = 2.5$.

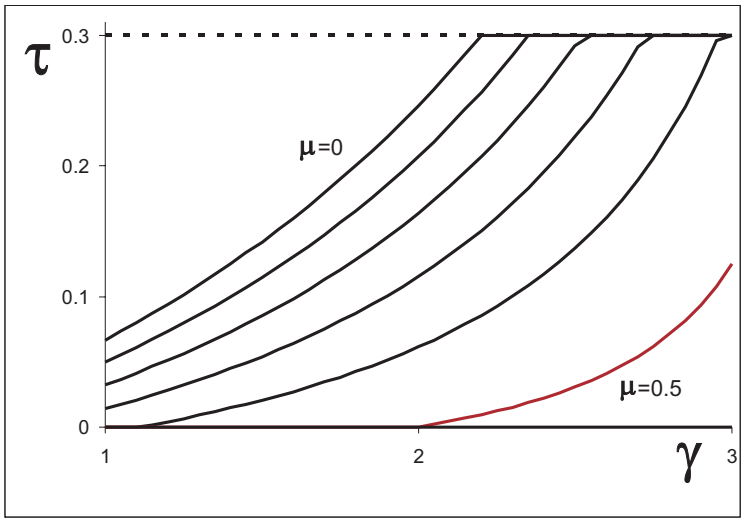

Figure 2: The optimal tariff τ as a function of the degree of capture γ for the weight of multi-regional interests μ ranging from $\mu = 0$ to $\mu = 0.5$.

In both figures, the parameters are: $a = 1$; $a^* = 4$; and the prohibitive tariff is: $\overline{\tau} = 0.3$.

Table 1: Fixed effects regressions

	(1) Productivity	(2) Sales	(3) Fixed assets	(4) Employment	(5) Return on sales
Number of neighbors captured by MR group	0.0128	0.0192	0.0159	0.0142	-0.0030
	[0.007]*	[0.010]*	[0.007]**	[0.007]**	[0.002]
Number of neighbors captured by MR group * Unrelated industry	-0.0349	-0.0412	-0.0032	-0.0077	0.0006
	[0.009]***	[0.011]***	[0.008]	[0.008]	[0.002]
Number of noncaptured neighbors	0.0104	0.0107	0.0025	-0.0049	0.0024
	[0.010]	[0.013]	[0.008]	[0.005]	[0.002]
Number of noncaptured neighbors * Unrelated industry	-0.0201	-0.0202	0.0032	0.0024	-0.0038
	[0.006]***	[0.008]**	[0.005]	[0.003]	[0.003]*
Unrelated industry	0.0008	0.0019	-0.0004	0.0029	-0.0027
	[0.011]	[0.011]	[0.009]	[0.007]	[0.003]
Mean concentration of PTs in neighbors	0.0180	0.0276	-0.0125	0.0025	-0.0051
	[0.040]	[0.045]	[0.041]	[0.019]	[0.011]
Mean number of PTs in neighbors	0.0156	0.0181	0.0030	-0.0039	0.0023
	[0.011]	[0.014]	[0.008]	[0.005]	[0.002]
Concentration of PTs in own region	0.0048	0.0294	0.0080	0.0130	0.0075
	[0.029]	[0.034]	[0.017]	[0.015]	[0.008]
Number of PTs in own region	0.0056	0.0111	0.0038	0.0018	0.0017
	[0.004]	[0.006]*	[0.003]	[0.003]	[0.001]
MR capture in own region	-0.0288	-0.0276	0.0006	-0.0010	-0.0045
	[0.018]	[0.019]	[0.013]	[0.008]	[0.003]
No capture in own region	0.0013	0.0221	0.0054	0.0104	0.0087
	[0.024]	[0.029]	[0.018]	[0.014]	[0.006]
Home and neighbor's industry structure controls	Yes	Yes	Yes	Yes	Yes
Year and firm fixed effects, industry-specific linear trend	Yes	Yes	Yes	Yes	Yes
Observations	102,028	81,656	110,253	104,573	111,723
R-squared	0.10	0.09	0.09	0.73	0.04

Note: Dependent variables are expressed in logs. Robust standard errors adjusted for clusters at the level of regions in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 2: Between effects regressions

	(1) Productivity	(2) Sales	(3) Investment	(4) Employment	(5) Return on sales
Share of neighbors captured by MR group	0.155	0.268	0.144	0.130	0.052
	[0.057]***	[0.065]***	[0.035]***	[0.045]***	[0.014]***
Share of neighbors captured by MR group * Unrelated industry	-0.043	-0.111	-0.089	-0.112	-0.023
	[0.052]	[0.068]	[0.033]***	[0.044]**	[0.012]*
Share of noncaptured neighbors	0.220	0.271	0.265	0.109	0.076
	[0.147]	[0.116]**	[0.063]***	[0.080]	[0.028]***
Share of noncaptured neighbors * Unrelated industry	-0.020	0.017	-0.064	-0.085	-0.031
	[0.065]	[0.075]	[0.043]	[0.060]	[0.018]*
Unrelated industry	-0.007	0.031	-0.026	0.016	0.015
	[0.018]	[0.016]*	[0.010]**	[0.011]	[0.004]***
Mean concentration of PTs in neighbors	-0.172	-0.020	0.080	-0.031	-0.011
	[0.172]	[0.160]	[0.078]	[0.124]	[0.034]
Mean number of PTs in neighbors	-0.007	0.013	0.013	-0.007	0.001
	[0.030]	[0.026]	[0.014]	[0.014]	[0.005]
Concentration of PTs in own region	-0.008	0.037	-0.065	-0.079	-0.035
	[0.057]	[0.073]	[0.047]	[0.053]	[0.013]***
Number of PTs in own region	0.003	-0.004	-0.015	-0.009	-0.004
	[0.009]	[0.012]	[0.009]	[0.009]	[0.002]**
MR capture in own region	-0.008	-0.004	-0.003	0.042	-0.011
	[0.030]	[0.036]	[0.031]	[0.033]	[0.006]*
No capture in own region	-0.012	-0.026	-0.057	-0.044	-0.026
	[0.040]	[0.052]	[0.053]	[0.039]	[0.009]***
Total number of neighbors	-0.010	-0.003	-0.009	-0.002	0.000
	[0.010]	[0.011]	[0.007]	[0.008]	[0.002]
Regional controls	Yes	Yes	Yes	Yes	Yes
Home and neighbor's industry structure controls, initial performance	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	25,181	26,748	24,685	26,717	23,445
R-squared	0.31	0.08	0.66	0.07	0.34

Note: Dependent variables are expressed in logs. Robust standard errors adjusted for clusters at the level of regions in brackets. * significant at 10%; **significant at 5%; *** significant at 1%.

A Appendix

A.1 Data sources

Capture and captors in Russian regions

The database contains an account of all preferential treatments between 1992 and 2003 given by regional legislators and regulators to 978 firms in Russia. Firms were chosen on the basis of being among the five largest firms at least once during 1992 - 2003 in any Russian region. An enterprize was said to be treated preferentially if it received any of the following benefits: tax breaks, investment credits, subsidies, subsidized loans and loans with a regional budget guarantee, official delays in tax payments, subsidized licensing, free grants of state property, or a special "open economic zone" status for their territory. The number of regional laws and regulations that grant distinct preferential treatments to each firm in the sample each year is collected. The source of the information about preferential treatments is the comprehensive database of Russia's regional legislation "Consultant Plus" (www.consultant.ru/Software/Systems/RegLaw). It is worth noting that preferential treatment data have a couple of significant drawbacks: First, the importance of different preferential treatments cannot by quantified (i.e., we cannot compare the benefits firms get from a tax break or a transfer of a large piece of land to them); thus, the data are just a count of the number of legislative acts with distinct preferential treatments. Second, authors identify preferential treatment only when texts of the law contain direct reference to a firm. Despite these drawbacks, the measures of regional-level capture and firms' political influence survive a number of reality checks. Looking at the five largest recipients of preferential treatments per region in any particular year seems to be sufficient to construct reliable measures of political power for firms and state capture for regions because for the vast majority of years and regions (well above 90%), fewer than six firms receive preferential treatments. For a more detailed description of the data see Slinko, Yakovlev and Zhuravskaya (2005).

Cross-section of ownership and control in Russia

Ownership data that we start with are described by Guriev and Rachivsky (2005) as follows: "The project identified the structure of control for about 1,700 large firms in 45 sectors of Russian economy... The sectors were selected based on their size in order for the survey to cover as large a portion of the economy as possible... The next stage was to target the largest establishments and firms within the sectors. In industry, for example, our firms represented 35 percent of employment and 85 percent of sales of the selected sectors. Finally, economists and business journalists interviewed investment banks, consultancies, business advisors, information agencies and other institutions. They identified the main controlling owners of each firm and the portion of the firm they owned and also any subsidiaries owned by the firms. This in turn generated new sets of firms to be investigated - subsidiaries and corporate owners. A chain would stop downward when a firm owned no subsidiaries and would stop upward when an "ultimate owner" or "controlling party" was identified. The data were checked and supplemented with publicly accessible information." (p. 132).

Histories of Russian companies

The Labyrinth data set The data set contains informal but very detailed account of the histories of most Russian companies. The histories include records of all the major ownership changes. The data set can be found at http://www.panorama.ru/info/labir.html.

Table A.1: Types of regional capture

Region	1996	1997	1998	1999	2000	2001	2002	2003
Adygeya republic	R	R	R	R	R	R	R	R
Altai krai	R	NO	MR	MR	NO	R	R	R
Altai republic	NO	R	R	R	R	R	R	R
Amur oblast	R	R	R	R	R	R	R	NO
Arkhangelsk oblast	NO	NO	NO	NO	NO	R	R	R
Astrakhan oblast	R	R	MR	R	R	R	R	R
Bashkortostan republic	R	R	R	R	NO	NO	NO	R
Belgorod oblast	MR	NO	NO	NO	NO	MR	NO	NO
Bryansk oblast	NO	R	R	NO	NO	R	NO	R
Chelyabinsk oblast	R	R	R	R	R	MR	MR	NO
Chita oblast	NO	R	NO	R	NO	R	NO	NO
Chuvash republic	NO	NO	NO	R	R	R	R	R
Dagestan republic	NO	R	R	R	R	NO	NO	R
Evrei autonomous oblast	NO	NO	NO	R	R	NO	NO	R
Irkutsk oblast	NO	NO	NO	NO	NO	NO	NO	NO
Ivanovo oblast	R	R	R	R	R	R	R	R
Kabardino-Balkar republic	NO	R	R	R	R	R	R	NO
Kaliningrad oblast	R	R	NO	NO	R	R	R	R
Kalmyk republic	NO	NO	NO	R	R	R	NO	NO
Kaluga oblast	R	NO	NO	NO	NO	R	R	R
Kamchatka oblast	NO	NO	NO	NO	R	R	R	NO
Karelia republic	NO	MR	R	NO	MR	NO	NO	MR
Kemerovo oblast	NO	NO	R	R	MR	MR	MR	R
Khabarovsk krai	R	R	R	R	NO	R	R	R
Khakasia republic	NO	NO	NO	NO	NO	NO	NO	R
Khanty-Mansi autonomous okru	NO	NO	NO	R	NO	NO	NO	
Kirov oblast	R	R	R	R	R	NO	MR	MR
Komi republic	R	R	R	R	MR	NO	R	MR
Kostroma oblast	R	R	R	R	NO	MR	MR	MR
Krasnodar krai	NO	NO	R	R	NO	NO	NO	MR
Krasnoyarsk krai	NO	NO	NO	MR	MR	NO	R	NO
Kurgan oblast	NO	NO	NO	NO	NO	R	R	R
Kursk oblast	MR	R	MR	MR	MR	MR	MR	MR
Lipetsk oblast	R	R	NO	NO	R	R	R	R
Magadan oblast	NO	NO	NO	NO	NO	NO	NO	NO
Mari-El republic	NO	R	NO	NO	R	NO	NO	R
Mordovia republic	R	R	R	R	R	R	R	R
Moscow city	R	R	R	R	NO	R	R	R
Moskow oblast	NO	R	R	R	R	R	R	NO
Murmansk oblast	MR	NO	NO	MR	MR	MR	NO	NO
Nizhny Novgorod oblast	R	NO	NO	R	NO	NO	NO	R
Novgorod oblast	NO	NO	R	R	NO	R	R	R
Novosibirsk oblast	R	R	NO	R	R	R	R	MR
Omsk oblast	MR	MR	MR	MR	MR	MR	MR	MR
Orenburg oblast	MR + R	MR + R	R	MR + R	NO	MR	NO	NO
Oryol oblast	R	R	R	MR	MR	MR	NO	NO
Penza oblast	NO	MR	MR	R	R	R	R	MR
Perm oblast	NO	NO	R	R	R	R	NO	NO
Primorskii krai	R	NO	NO	R	NO	R	R	NO
Pskov oblast	R	NO	NO	R	NO	NO	NO	R
Rostov oblast	R	R	R	R	R	R	MR + R	NO
Ryazan oblast	R	MR	NO	NO	NO	NO	NO	NO
Sakha (Yakutia) republic	MR	R	R	R	MR	MR	R	MR
Sakhalin oblast	R	R	R	R	R	MR	NO	NO
Samara oblast	MR	R	R	MR	R	R	NO	NO
Saratov oblast	NO	MR	MR	MR	MR	MR	MR	MR
Smolensk oblast	R	R	R	R	NO	R	NO	NO
St. Petersburg city	NO	NO	R	R	R	NO	MR	NO
Stavropol krai	R	MR	MR	MR	MR	MR	R	R
Sverdlovsk oblast	R	R	R	MR	NO	R	NO	NO
Tambov oblast	R	NO	R	R	R	R	R	R
Tatarstan republic	R	R	R	R	R	R	NO	NO
Tomsk oblast	R	R	MR	MR	MR	R	R	R
Tula oblast	NO	R	R	R	R	R	NO	R
Tver oblast	NO	NO	R	R	R	R	NO	MR
Tyumen oblast	R	MR	NO	R	NO	NO	NO	NO
Udmurtia Republic	NO	MR + R	MR	MR	MR	R	R	NO
Ulyanovsk oblast	NO	R	MR	MR	NO	NO	NO	NO
Vladimir oblast	R	R	NO	R	R	R	R	R
Volgograd oblast	MR	R	R	R	R	R	R	NO
Vologda oblast	MR	NO	MR	NO	MR	R	MR	R
Voronezh oblast	R	R	R	MR	NO	R	MR	MR
Yaroslavl oblast	MR	MR	MR	MR	MR	MR	MR	MR

Note: "MR," "R" and "NO" denote different types of capture of the neighboring regions: multiregional, regional, and no capture, respectively. "MR + R" indicates that one half of preferential treatments a region goes to a multiregional group and the other half to a regional group.

Table A.2: Number of neighbors by types of capture

		1996			1997			1998			1999			2000			2001			2002			2003		
Region	N	MR	R	NO	MR	R	NO	MR	R	NO	MR	R	NO	MR	R	NO	MR	R	NO	MR	R	NO	MR	R	NO
Adygeya republic	1	0	0	1	0	0	1	0	1	0	0	1	0	0	0	1	0	0	1	0	0	1			
Altai krai	3	0	1	2	0	2	1	0	2	1	0	3	0	1	2	0	1	2	0	1	2	0	1	2	0
Altai republic	3	0	1	2	0	0	3	1	1	1	1	1	1				1	1	1	1	1	1	0	3	0
Amur oblast	4	1	1	2	0	2	2	0	2	2	0	4	0	1	1	2	1	2	1	0	2	2	1	2	1
Arkhangelsk oblast	5	1	3	1	2	2	1	1	3	1	0	2	3	3	1	1	0	0	5				3	1	1
Astrakhan oblast	2				0	1	1	0	1	1	0	2	0	0	2	0	0	2	0	0	1	1	0	0	2
Bashkortostan republic	6	1	3	3	2	5	1	1	3	2	3	4	0	1	3	2	2	3	1	1	1	4	0	0	6
Belgorod oblast	2	1	1	0	0	2	0	1	1	0							1	1	0						
Bryansk oblast	4	1	2	1	0	3	1	1	2	1	2	1	1				2	2	0	1	1	2	1	1	2
Chelyabinsk oblast	4	1	2	2	1	3	1	0	1	3	2	2	1	0	0	4				0	1	3	0	2	2
Chita oblast	3	1	1	1	0	1	2	0	2	1	0	2	1	1	1	1	1	1	1	0	2	1			
Chuvash republic	5	0	3	2	0	4	1	1	2	2	1	3	1	0	3	2	0	2	3	0	1	4	0	3	2
Dagestan republic	2	0	1	1							1	1	0	1	1	0	1	1	0	0	1	1	0	1	1
Evrei autonomous oblast	2	0	2	0	0	2	0	0	2	0	0	2	0	0	1	1	0	2	0	0	2	0	0	1	1
Irkutsk oblast	3				0	1	2	0	1	2	1	2	0				1	1	1	0	2	1			
Ivanovo oblast	4	1	3	0	1	2	1	1	1	2	1	3	0	1	1	2	2	1	1	2	1	1	2	2	0
Kabardino-Balkar republic	1	0	1	0																0	1	0	0	1	0
Kalmyk republic	5	1	3	1	1	4	0	2	3	0	1	4	0	1	4	0	1	2	2	1	4	1	0	3	2
Kaluga oblast	5	0	2	3	0	5	0	0	5	0	1	3	1	1	2	2	1	3	1	0	1	4	0	2	3
Karelia republic	3				0	0	3										1	1	1	1	1	1	0	2	1
Kemerovo oblast	6	0	3	3	0	3	3	2	1	3	3	2	1	2	2	2	0	4	2	0	5	1	1	4	1
Khabarovsk krai	6	1	3	2	0	2	4	0	3	3	0	4	2	1	3	2	2	1	3	0	2	4	1	1	4
Khakasia republic	3	0	0	3	0	1	2	0	2	1	1	2	0	2	1	0	1	1	1	1	2	0	0	2	1
Kirov oblast	9	1	4	4	1	5	4	2	4	3	1	5	3	3	3	3	1	4	4	2	2	5	2	4	3
Komi republic	6	0	2	4	1	2	3	0	2	4	1	3	2	0	2	4	0	2	4	1	1	4	1	1	3
Kostroma oblast	5	2	3	0	1	2	2	2	2	1	1	3	1	2	2	1	1	1	3	3	1	1	2	3	0
Krasnodar krai	3	0	3	0	1	2	0	1	2	0	1	2	0	1	2	0	1	1	1	1	3	0	0	2	1
Kurgan oblast	3	0	2	1	1	2	0	0	1	2	1	1	1	0	1	2							0	0	3
Kursk oblast	5	1	3	1	0	3	2	0	3	2				1	1	3	2	2	1	1	1	3	1	2	2
Lipetsk oblast	6	1	4	1	1	4	1	1	4	1	3	2	1	2	2	2	2	3	1	2	1	3	2	2	2
Magadan oblast	3	1	1	1	0	1	2	0	2	1	0	2	1	1	1	1	1	2	0	0	3	0	1	1	1
Mari-El republic	4	0	3	1	0	2	2	0	2	2	0	4	0	0	3	1	0	2	2	1	1	2	1	2	1
Mordovia republic	5	0	2	3	2	1	2				1	3	1	0	2	3	0	2	3	0	2	3	1	2	2
Moscow city	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	1
Moskow oblast	8	1	4	3	2	4	2	1	4	3	1	5	2	1	3	4	1	6	1	1	3	4	2	4	2
Murmansk oblast	1	0	0	1				0	1	0	0	0	1				0	0	1	0	0	1			
Nizhny Novgorod oblast	8	0	6	2	1	6	1	0	4	4	0	6	2	0	6	2	1	4	3	2	4	2	2	5	1
Novgorod oblast	3	1	1	1	0	0	3	1	1	1	0	2	1	1	1	1	0	1	2				1	2	0
Novosibirsk oblast	4	1	2	1	1	1	2	3	1	0	3	1	0				2	2	0	2	2	0	1	3	0
Omsk oblast	3	0	3	0	1	2	0				1	1	1	1	1	1	0	2	1	0	2	1	1	1	1
Orenburg oblast	5	1	3	1	1	4	0	1	4	0	2	3	0	1	3	1	2	2	1				1	1	3
Oryol oblast	5	1	1	3	0	3	2	1	2	2	1	1	3	1	2	2	1	3	1	1	2	2	1	4	0
Penza oblast	5	0	3	2	2	2	1	2	2	1	2	2	1	1	2	2	1	2	2	1	2	2	1	2	2
Perm oblast	5	0	3	2	1	5	0	1	3	1	2	3	0	2	1	2	0	1	4	1	1	3	2	1	2
Primorskii krai	1	0	1	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0	0	1	0
Pskov oblast	3	0	1	2	0	1	2	0	3	0	0	3	0	0	1	2	0	3	0	0	1	2	1	1	1
Rostov oblast	5	1	2	2	1	2	2	1	3	1	2	3	0	1	2	2	1	3	1	1	2	2	2	1	2
Ryazan oblast	8	0	5	3	1	4	3	1	4	3	0	7	1	0	7	1	0	7	1	0	6	2	1	6	1
Sakha (Yakutia) republic	6	0	2	4	0	3	3	0	2	4	1	3	2	1	1	4	0	3	3	0	3	3	0	1	5
Samara oblast	4	1	2	2	2	3	0	2	1	1	3	2	0	1	1	2	2	1	1						
Saratov oblast	7	3	3	2	2	5	1	2	4	1	4	4	0	0	4	3	1	5	1	1	3	3	2	1	4
Smolensk oblast	5	0	1	4	0	2	3	0	3	2	0	3	2	0	2	3	0	3	2	0	2	3	1	3	1
Stavropol krai	5	0	1	4	0	2	3	0	3	2	0	5	0	0	4	1	0	2	3	1	2	3	1	1	3
Sverdlovsk oblast	7	0	4	3	1	3	3	0	4	3	0	5	2	1	2	4	1	1	5	1	1	5	1	2	3
Tambov oblast	5	0	3	2	3	1	1	2	1	2	2	1	2	1	2	2	1	3	1	2	2	1	3	1	1
Tatarstan republic	8	2	3	4	2	7	1	2	3	3	4	4	1	1	4	3	1	3	4	1	2	5	1	3	4
Tomsk oblast	6	1	2	3	2	1	3	1	1	4	2	3	1	3	1	2	2	1	3	2	2	2	2	1	2
Tula oblast	5	0	3	2	1	2	2	0	2	3	1	1	3	1	2	2	1	3	1	0	3	2	0	2	3
Tver oblast	6	2	2	2	1	2	3	2	3	1	1	4	1	2	1	3	1	3	2	2	2	2	1	3	2
Udmurtia Republic	4	0	3	1	0	3	1	0	4	0	0	4	0	0	3	1	0	2	2				1	1	2
Ulyanovsk oblast	6	1	2	3	2	3	1	2	3	1	2	4	0	1	5	0	1	5	0	1	3	2	2	2	2
Vladimir oblast	5	1	3	1	2	2	1	1	2	2	1	3	1	1	2	2	1	2	2	1	2	2	1	2	2
Volgograd oblast	5	0	3	2	1	3	1	2	2	1	2	3	0	1	3	1	1	3	1	3	2	1	2	1	2
Vologda oblast	7	1	2	4	2	2	3	1	5	1	1	4	2	2	2	3	2	3	2	3	2	2	5	2	0
Voronezh oblast	7	3	3	1	1	3	3	2	3	2	2	3	2	2	4	1	3	3	1	3	4	1	2	2	3
Yaroslavl oblast	6	1	3	2	0	4	2	1	4	1	0	5	1	1	4	1	1	4	1	2	3	1	2	3	1

Note: "N" denotes the number of neighboring regions; "MR," "R" and "NO" denote different types of capture of the neighboring regions: multiregional, regional, and no capture, respectively. When MR+R+NO>N, some of the neighbors are classified as captured by both regional and multiregional groups.

Table A.3: Summary statistics for performance and the extent of capture

Variable	Obs	Mean	Std. Dev.	Min	Max
Firms*years:					
Log sales	102 221	8.24	2.23	-1.34	16.92
Log employment	102 226	4.93	1.39	0.00	11.59
Log fixed assets	94 281	8.61	2.34	-1.70	17.67
Log productivity	102 230	3.32	1.31	-7.61	10.79
Return on Sales	78 575	-0.03	0.25	-1.00	1.00
Regions*years:					
Concentration of PTs	429	0.45	0.30	0.20	1.00
Sum of PTs	429	2.04	2.17	0.00	12.00