
Volume 94, Nos. 9–10, October 2010 ISSN 0047-2727

ELSEVIER

JOURNAL OF PUBLIC ECONOMICS

94 (9–10) 549–812
(2010)

Contents

Contents continued on back cover

Journal of Public Economics 94 (2010) 730–748

Contents lists available at ScienceDirect

Journal of Public Economics

journal homepage: www.elsevier.com/locate/jpube

Interest group politics in a federation

Sergei Guriev [a,b,c], Evgeny Yakovlev [d], Ekaterina Zhuravskaya [a,e,f,*]

[a] New Economic School, 47 Nakhimovsky Prospect, 117418 Moscow, Russia
[b] Center for Economic and Financial Research (CEFIR), Russia
[c] Center for Economic Policy Research (CEPR), United Kingdom
[d] University of California, Berkeley, United States
[e] Paris School of Economics, France
[f] EHESS, France

ARTICLE INFO

Article history:
Received 26 March 2009
Received in revised form 22 March 2010
Accepted 14 April 2010
Available online 5 May 2010

JEL classification:
D78
F15
F23
H77
P26

Keywords:
Federalism
Interest groups
Inter-jurisdictional externalities
Inter-state trade barriers
Multinational firms

ABSTRACT

The optimal degree of decentralization depends on the importance of inter-state externalities of local policies. We show that inter-state externalities are determined by the spatial distribution of interest groups within the country. Interest groups who have multi-state scope internalize inter-state externalities to a larger extent than the lobbyists with interests within a single state. We use variation in the geographic boundaries of politically-powerful industrial interests to estimate the effect of inter-state externalities on firm performance. Using firm-level panel data from a peripheralized federation, Russia in 1996–2003, we show that, controlling for firm fixed effects, the performance of firms substantially improves with an increase in the number of neighboring regions under influence of multi-regional business groups compared to the number influenced by local business groups. Our findings have implications for the literatures on federalism and on international trade as trade restrictions are a common source of inter-state externalities.

1. Introduction

The main normative question of federalism is how to resolve the tradeoff between costs and benefits of decentralization. The benefits of decentralization come from the better use of local information (Hayek, 1948) and stronger fiscal and political incentives of government officials (Tiebout, 1956). The main cost is associated with inter-state externalities, i.e., a situation in which subnational authorities do not fully internalize the effects of their policies on other states in the country (Musgrave, 1969; Oates, 1972). Externalities are inherent in many state policies, such as state trade restrictions, regulation of factor mobility across state borders, investment in public infrastructure, pollution control, state capital taxation, issuance of surrogate currency, etc. How important are inter-state externalities? What determines their magnitude? This paper sheds light on the role of interest group politics in inter-state externalities.

In his classic work, Riker (1964) associated large inter-jurisdictional externalities with "peripheralized" federalism—in his terms, federalism with weak nationwide political institutions, and low externalities with "centralized" federalism—federalism with strong nationwide political institutions. In particular, he argued that strong national political parties generate career concerns for local public officials to be promoted to the national-level politics which, in turn, helps internalization of inter-state externalities.[1]

Riker's theory, however, does not explain how strong nationwide institutions emerge and why they form in some countries and not in others. We argue that the theory of interest group politics (Olson, 1982; Grossman and Helpman, 1994, 2001) can help answering these questions. According to Grossman and Helpman, inefficiencies in the political process stem from the inability of certain groups to organize themselves. Suboptimal policies emerge because organized interest groups neglect the welfare of non-organized groups. Therefore, broader scope of interest groups leads to more efficient

* Corresponding author. New Economic School, 47 Nakhimovsky Prospect, 117418 Moscow, Russia. Tel.: +7 7495 9255002; fax: +7 7495 9255003.
E-mail address: EZhuravskaya@nes.ru (E. Zhuravskaya).

[1] Riker's theory found solid empirical support; see, for instance, Enikolopov and Zhuravskaya (2007).

0047-2727/$ – see front matter © 2010 Elsevier B.V. All rights reserved.
doi:10.1016/j.jpubeco.2010.04.004

outcomes. We extend this logic to the analysis of interest groups in a federation.

The spatial distribution of politically-important industrial interests has an effect on inter-state externalities. In particular, multi-state interest groups internalize the inter-state externalities of local policies to a larger extent than powerful industrial lobbies with interests in a single state. Therefore, politicians in a federation with multi-state interest groups have a greater stake in the national welfare, which may result in the formation of nationwide political institutions. The equilibrium policies that result from lobbying by multi-state groups have lower negative (and higher positive) externalities. For example, trade barriers set by states with powerful lobbies comprised of multi-state business groups are lower than barriers set by states in which the most powerful interest groups are local. In addition, states with powerful multi-state lobbies may even be less protectionist than states with perfectly accountable (non-captured) governments who oppose trade for fiscal reasons or due to terms-of-trade effects.

We illustrate the difference in the effects of the multi-state vs. single-state lobbyists on the intensity of inter-state externalities with a simple model and test the model's predictions using data from Russia in 1996–2003. We merge two panel datasets: (1) a dataset on the performance of a regionally-representative sample of large and medium-size Russian firms and (2) a unique dataset on the geographical scope of powerful industrial lobbies in Russian regions. We show that the performance of an average firm depends on whether policies of neighboring regions are influenced by regional or multi-regional lobbies, controlling for a wide variety of factors, including firm fixed effects and macroeconomic trends. An increase in the number of neighboring regions with governments under political influence of multi-regional industrial groups (compared to having them being under influence of regional industrial groups) has a significant and substantial positive effect on the performance of firms operating in industries related to the lobby of the neighboring regions. We conclude that spillovers from regional policies lobbied by multi-regional industrial groups are significantly more benign to firms located in the neighboring regions compared to spillovers from regional policies lobbied by regional industrial groups.

In the general case, we estimate the reduced-form relationship between firm performance in one region and the scope of industrial lobbies in other regions. However, theoretically, there is an intermediate step in the analysis: lobbies affect regional policies and regional policies affect firms in other regions. We skip this step in the main empirical exercise because there are no systematic data on the actual policies that generate externalities for all industries and regions. In order to fill this gap, we conduct two additional exercises which shed light on policies in more specific contexts. In the first of these two exercises, we provide anecdotal evidence on inter-regional trade barriers as a source of these externalities. We present two case studies to illustrate this effect. In the first case study we show how a regional industrial group lobbied for erecting inter-regional trade barriers; once the very same interest group became multi-regional, it reversed its stance from protectionist to pro-trade. The second case study refers to the beer industry where many local producers have successfully lobbied for non-tariff inter-regional trade barriers in their regions. At the same time, the regions with the presence of multi-regional beer producers have never instituted such barriers. In the second exercise, we also provide systematic evidence on how the presence of multi-regional vs. regional alcohol producers in the Russian regions results in differential levels of regional import restrictions on alcohol and how these restrictions affect alcohol producers in the neighboring regions.

We focus on Russia in 1996–2003 as a unique constellation of political and economic factors makes it an ideal testing ground for an empirical study of the relationship between inter-regional externalities and geographical scope of regional lobbyists. Firstly, a high degree of economic and political autonomy of regional governors made Russia a typical example of Riker's "peripheralized" federalism. Secondly, industrial interest groups played a very important role in policymaking at all levels of government (including regional). Privatization in the early 1990s gave rise to a high concentration of wealth and, as a consequence, a high degree of state capture.[2] Thirdly—and most importantly—in order to estimate the impact of geographical distribution of interest groups over time, one has to assume that the over-time changes in the spatial distribution of assets belonging to large owners of privatized businesses are exogenous to the inter-jurisdictional externalities (controlling for fixed effects and over-time variation in the spatial distribution of value added). This assumption is admittedly rather strong, but it is more reasonable in the Russian context than elsewhere. The reason is that the scope of business groups has been determined by a combination of (i) the non-market-based industrial production chains inherited by Russia from the Soviet planning system (Bergson, 1961; Gregory and Stuart, 2001; Hill and Gaddy, 2003), (ii) the largely ad-hoc privatization process of the 1990s (Boycko et al., 1995; Shleifer and Treisman, 2000), and (iii) the consolidation of ownership by business groups at the end of 1990s and the early 2000s with the primary aim of vertical integration because of a high degree of contractual incompleteness (Guriev and Rachinsky, 2005). Thus, we consider Russia in transition a unique natural laboratory for measuring the effect of the geographical size of lobbies on inter-state externalities.

Since the assumption about the exogeneity of the over-time changes in the scope of interest groups is, nonetheless, a strong one and not testable directly, we supplement our baseline panel fixed effects analysis with the results of cross-regional analysis. In the cross-section, we are able to instrument the extent of regional capture with the initial industrial concentration and the type of regional capture with the share of the largest regional firms that were privatized during the initial 1993 privatization wave. The cross-sectional results are also consistent with our main hypothesis.

1.1. External validity

Inter-state externalities play an important role in every federation. The Founding Fathers of the United States understood this well as early as 220 years ago. After the Revolution and the Declaration of Independence, the Articles of Confederation provided individual states with substantial autonomy in economic policy. The states used this autonomy to erect high inter-state trade barriers. The authors of the Constitution argued that a common market is a necessary condition for the country's successful development and insisted on the Commerce Clause.[3] The Federalists (1787–1789) not only emphasized the importance of the common market for economic prosperity ("*active commerce in our own bottoms,*" "*unrestrained intercourse between the States themselves*," Hamilton, Federalist Paper No. 11) and sustainability of the federation ([*the absence of the common market*] "*would nourish unceasing animosities, and not improbably terminate in serious interruptions of the public tranquility,*" Madison, Federalist Paper No. 42) but also stressed the inherent free-rider problem between the states. They argued that without special institutional arrangements that would delegate all aspects of trade policy to the federal level, inter-state trade barriers are bound to emerge in equilibrium. In Federalist Paper No. 42, James Madison wrote:

> "The defect of power in the existing Confederacy to regulate the commerce between its several members, is in the number of those which have been clearly pointed out by experience."

[2] By state capture, we mean a high degree of dependence of public policy on special interests. For the theoretical applications of the interest group politics to Russia, see Glaeser, Scheinkman and Shleifer (2003) and Sonin (2003); for the empirical evidence on state capture in Russian regions, see Slinko, Yakovlev and Zhuravskaya (2005).

[3] Article I Section **8** of the Constitution of the United States of America, also reinforced by Article I Section 10.

As a result, the "*maintenance of harmony and proper intercourse among the States*" became one of the six main functions of the US federal government (Madison, Federalist Paper No. 41).[4]

While the Commerce Clause has given the federal government the authority to enforce a common market and created the largest free trade area of that time, inter-state barriers have not disappeared altogether. Hollander and Popper (1994) provide multiple examples of inter-state trade barriers throughout American history (as well as Canadian and European history). Wiseman and Ellig (2007) study the inter-state barriers in alcohol trade within the US as recently as 2002. The issue of inter-state trade barriers was especially important during the Great Depression. In 1941, the US Department of Commerce's National Marketing Laws Survey counted 1489 active inter-state barriers; the omnipresent inter-state barriers were often referred to as the "Balkanization of America."[5]

Inter-state trade barriers and other policies with negative inter-state externalities are a common phenomenon in other federations as well. The Canadian Chamber of Commerce (CCC, 2004) describes inter-provincial trade barriers in Canada; Young (2000) and Poncet (2004) provide evidence of inter-provincial barriers in post-1970s-reform China; Berkowitz and DeJong (1999) show the existence of inter-regional trade barriers in transitional Russia. The literature also studies inter-state externalities in situations when the federal government partially loses its monopoly on monetary policy (see, e.g., Tommasi et al. (2001) on Argentina and Woodruff (2000) on Russia).

1.2. Related literature

This paper's contribution is three-fold. First, our findings are directly linked to the literature on fiscal federalism. Much of the previous work aimed at establishing direct link between federalism and corruption. In particular, Fisman and Gatti (2002) and Fan, Lin and Treisman (2009) find a positive association between different measures of decentralization and corruption across countries. Enikolopov and Zhuravskaya (2007) show that the link between decentralization and corruption depends on counties' political institutions. Gennaioli and Rainer (2007) document the role of pre-colonial political centralization for local public goods provision in Africa and make a specific reference to the importance of the internalization of spillovers measured by comparing the effects for different public goods. Micro-level evidence on federalism and corruption is surveyed in Bardhan (2002). Our contribution to this literature is in estimation of the micro-level effects of inter-jurisdictional externalities. We show that the efficiency of decentralization depends on the geographical scope of industrial interests and quantify the lower bound of the effect of inter-jurisdictional externalities on firm performance. Despite the consensus in the literature about the importance of inter-state externalities for the economic and political success of federations, there has been a void of empirical research on the issue. Furthermore, our paper provides direct evidence in support of the theory developed in Bordignon, Colombo and Galmarini (2008) which shows that when regional lobbies have conflicting interests, centralization is preferable.

Second, we conduct a test of the special interest theory (Grossman and Helpman, 1994, 2001). In accordance with the theory, our findings confirm that the broader the scope of interest groups, the more efficient the outcomes.

Third, our results contribute to the literature on political economy of international trade as they imply that lobbying by multinationals reduces protectionism. We find empirical support for the predictions of Hillman and Ursprung (1993) and Endoh (2005) about the role of multinational interest groups in liberalizing trade. Our findings complement existing empirical literature which focused exclusively on the effect of foreign lobbying (e.g., Gawande et al., 2006; Kee et al., 2004) and overlooked the effect of lobbying by multinational corporations. We consider our exercise as a quasi-laboratory experiment for an analysis of the effects of lobbying sovereign governments by multinationals and domestic firms. Our approach has a number of advantages relative to the standard empirical methodology in political economy of international trade (Goldberg and Maggi, 1999; Gawande and Bandyopadhyay, 2000). 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 in contrast to the existing trade literature, which so far is based on cross-sectional evidence. Second, we consider a 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 more homogeneous than sovereign states.

The paper proceeds as follows. Section 2 presents a simple theoretical framework and develops testable predictions. Section 3 provides anecdotal evidence. Section 4 presents the data and empirical methodology. Section 5 presents the baseline results and some quantitative evidence on one of the channels of influence. Section 6 presents cross-region instrumental variables analysis. Section 7 focuses on robustness checks. Section 8 concludes.

2. Theoretical framework

The purpose of this section is to formulate testable hypotheses. We present a simple partial equilibrium model of trade that illustrates how tariff policies of a regional government depend on the identity of the lobbyists. For simplicity, we consider a trade model but its setup and results can be trivially generalized to a model of any other subnational policy (or regulation) with inter-state externalities, i.e., for any policy that protects domestic lobbyists from their out-of-region competitors, such as non-tariff trade barriers, regulation of product, capital, or labor markets, and subsidies. The model describes the political economy of any subnational policy that has externalities on the neighboring jurisdictions.

The model is a straightforward modification of a standard textbook analysis of an optimal tariff in a large economy (e.g., Krugman and Obstfeld, 1991). The main idea of the model is as follows: if powerful lobbyists have a stake in firms located outside the region, they are less inclined to lobby for policies with negative externalities on firms in other regions.

2.1. A simple model

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 $a^*>a$.[6]

[4] Being a multi-state businessman, George Washington must have recognized the effects of inter-state externalities on his own business. While most of his business was concentrated in Virginia, he exported to other states and other countries; more importantly, he was a founder of the Ohio Company which operated throughout the territory of the modern states of Ohio, Indiana, Pennsylvania, and West Virginia. In addition, George Washington was a founder of the Potowmack Company which invested in improving navigability of the Potomac River and generated substantial positive externalities for the development of the neighboring states.

[5] See, for instance, Melder (1937); Hollander and Popper, (1994) and "De-Balkanizing States and Cities" in *The Time Magazine*, Monday, April 17, 1939.

[6] This assumption is necessary to generate trade between regions. An alternative approach is to consider a differentiated good produced by firms at Home and Abroad, varieties of which are demanded both at Home and Abroad. Such a 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. For the sake of simplicity, we present the model with a homogenous good.

The government of the home region sets an import tariff τ to maximize the weighted average of the consumer surplus of home consumers, tariff revenues, and domestic producer surplus (Baldwin, 1987; Bagwell and Staiger, 2006). The tariff revenues and consumer surplus enter the government's objective function with the weight 1, while the producer surplus enters with the weight $\gamma \geq 1$. Grossman and Helpman (1994) provide microfoundations for this utility function. In their framework, the parameter γ reflects political power of the local industrial lobby, i.e., domestic producers; in other words, it is the extent to which the Home government is under the influence of the local industrial lobby. If $\gamma=1$, there is no "state capture" and the Home government maximizes social welfare; the greater the γ, the stronger the extent of state capture.[7] In what follows we take γ as exogenously given.

We shall assume that the domestic industrial lobby in addition to being an owner of the 100% of industry at Home also owns μ [0,1) share of the firms Abroad. The total producer surplus that belongs to the domestic lobby is $PS+\mu PS^*$ (where PS denotes producer surplus of home producers and PS^* producer surplus of producers from abroad). Thus, the home region government maximizes $CS+TR+\gamma(PS+\mu PS^*)$, where CS denotes the domestic consumer surplus and TR is the domestic tariff revenue.[8]

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

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

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

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

The second-order condition is equivalent to both the numerator and denominator in Eq. (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 lobbying power γ and the weight of multi-regional interests μ. We summarize comparative statics in the following proposition.

Proposition 1. *The optimal tariff τ is*:

1. *weakly decreasing in the weight of multi-regional interests μ for a given level of political power of lobbyists γ;*
2. *weakly increasing in γ for a given level of μ if μ is sufficiently small*: $\mu < \frac{1+1/a^*}{1+1/a}$.[9]
3. *weakly increasing in γ for a given level of lobbying power of out-of-region interests $\gamma\mu$.*

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

$$\frac{\partial^2 W}{\partial\mu\partial\tau} = -\gamma a^* P^* \frac{1+a}{2+a+a^*}; \frac{\partial^2 W}{\partial\gamma\partial\tau}\Big|_{\gamma\mu=\text{const}} = aP\frac{1+a^*}{2+a+a^*};$$

$$\frac{\partial^2 W}{\partial\gamma\partial\tau} = \frac{aP1+a^*}{2+a+a^*} - \mu a^* P^* \frac{1+a}{2+a+a^*}$$

As $\frac{\partial^2 W}{\partial\mu\partial\tau}$ is negative and $\frac{\partial^2 W}{\partial\gamma\partial\tau}\Big|_{\gamma\mu=\text{const}}$ is positive, we directly obtain the Claims 1 and 3. The sign of $\frac{\partial^2 W}{\partial\gamma\partial\tau}$ depends on the magnitude of μ. If the extent of multi-regional 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.

Figs. 1 and 2 illustrate the optimal tariff as a function of γ and μ. The intuition is straightforward. For a given level of political power of lobbyists γ, the higher the out-of-region component in the interest groups, the more they benefit from a tariff reduction. For a given level of their interest abroad μ, the effect of the extent of political power of lobbyists γ on policy depends on two countervailing forces: On the 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. Finally, the higher the political strength of the "foreign" interests in the region ($\gamma\mu$), the lower the tariff.

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

$$\tau_B = \frac{a^*-a}{(3+2a+a^*)(1+a^*)}.$$[10]

If the government is benevolent $\gamma=1$ and producers have a positive stake $\mu>0$ in the foreign producer surplus then the tariff will actually be lower $\tau = \frac{a^*-a-2a^*\mu}{(3+2a+a^*)(1+a^*)-(1+a)a^*\mu} < \tau_B$ 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. As our model considers partial equilibrium, it ignores the potential spillover effects in the factor markets, which could go in different directions. The general equilibrium analysis, however, goes far beyond the scope of this paper. Yet, if the region is sufficiently small compared to the whole country and the effects on other markets are not considered, 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 $TR+CS+CS^*+PS+PS^*$ which is maximized at $\tau=0$. (Note that there are no tariff revenues Abroad in our simple set up because goods flow only in one direction.) In this sense, multi-regional interest groups deliver greater social welfare than local ones.

[7] Formally, the model also covers the case $\gamma<1$ and all results go through; we focus on the more realistic scenario of $\gamma \geq 1$.

[8] Since we focus on the difference between the effects of multi-regional and purely local lobbies, we abstract from foreign lobbies that do not have any presence in the Home region; we assume that they have zero lobbying power. The results straightforwardly generalize to the case in which foreign lobbies exist in addition to domestic and multi-regional lobbies (for example if there are foreign-owned firms in the region).

[9] 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.

[10] The tariff τ_B that maximizes regional welfare $TR+CS+PS$ may also emerge in equilibrium under non-trivial $\mu>0$ and $\gamma>1$. For a given γ, there exists $\mu_B(\gamma)$ such that $\hat{\tau}=\hat{\tau}_B$; it is easy to show that $\mu_B(\gamma)$ is an increasing function for $\gamma>1$.

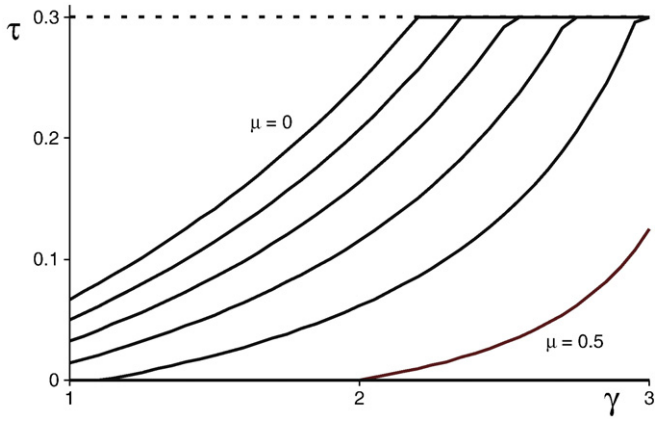

Fig. 1. The optimal tariff τ as a function of the degree of capture γ for the weight of multi-regional interests μ ranging from $\mu=0$ to $\mu=0.5$. Parameters: $a=1$, $a^*=4$, and the prohibitive tariff is $\overline{\tau}=0.3$.

Our simple model does not include three important effects that could potentially influence the multi-regional interest's impact on policy. All three of these effects, however, work in the same direction as predicted by our simple model. First, we abstract from vertical integration and intra-firm trade. It is clear, however, that the vertically integrated multi-regional firms are even more interested in free trade than the horizontally-integrated ones. Second, we assume away the policy response of the Abroad region. The latter would, of course, strengthen the multi-regional firms' incentives to lobby for lower tariffs in order to prevent retaliation. Third, as in most of the trade literature, we consider only two regions, Home and Abroad; the reason is that we would otherwise have to model formation of coalitions between regions which is beyond the scope of this paper. Finally, our model abstracts from the following fact: if a horizontally-integrated multi-regional company with constant returns to scale runs plants in both home and foreign regions, it may actually benefit from tariffs that protect its plants from competition in both regions. However, once the political competition is properly modeled, the presence of multi-regional campaign contributors has a liberalizing effect in this case as well because pro-trade candidates are more likely to win in both regions (Hillman and Ursprung, 1993).

As in the most trade policy literature, we assumed that agents are self-interested. As argued in Rotemberg (2003), protection may also emerge due to voters' altruism and compassion for workers in import-competing industries. Introducing altruistic voters would not affect our results: as mentioned by Rotemberg, interest groups' contribution and altruism can coexist. So the marginal effect of the type of capture would still be similar even in the presence of certain level of protection brought about by altruism.

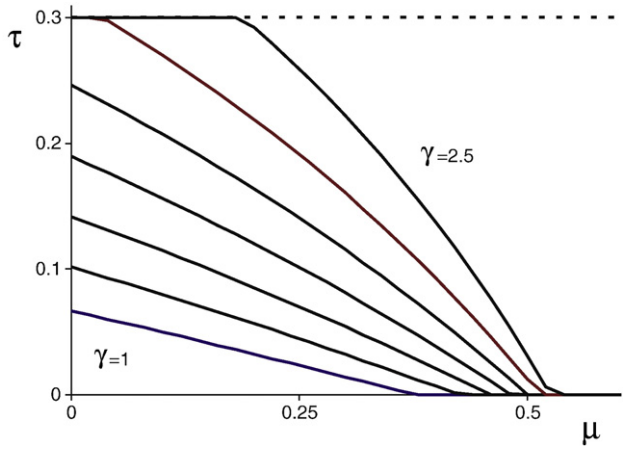

Fig. 2. The optimal tariff τ as a function of the weight of multi-regional interests μ when μ is sufficiently small for the degree of capture γ increasing from $\gamma=1$ to $\gamma=2.5$. Note that for large enough μ, this relationship does not hold. Parameters: $a=1$, $a^*=4$, and the prohibitive tariff is $\overline{\tau}=0.3$.

2.2. Testable predictions

The main prediction of our simple model is that multi-regional captors—politically-powerful industrial groups with special interests that span over several regions—set lower tariffs compared to regional captors—politically-powerful industrial lobbyists with interests only in their home region (see Claim 1 of Proposition 1). In addition, the model predicts that regional captors set higher tariffs than non-captured governments (see Claim 1 of Proposition 1 when $\mu=0$). These two predictions are clear cut and testable.

The model does not generate a prediction with regard to the comparison between non-captured governments and multi-regional capture (see Remark 1). Our analysis implies that the tariffs increase with political power of lobbyists γ for a given level of μ 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-multi-regional 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. Such data are not available.

The two main predictions of the model can be generalized to any subnational regulation or other subnational policy that affects business interests and imposes inter-state externalities. In general, the logic of the model predicts lower negative (and higher positive) externalities from states captured by multi-state industrial groups than from states captured by local industrial groups.

Since there are no systematic data on regional trade barriers in Russia for all industries and there are other policies with inter-regional externalities, we test the predictions of the model by estimating the reduced-form effect of multi-regional vs. purely local capture in a region on the performance of firms in other regions (rather than on the policies of that same region with external effects on other regions). Still, inter-regional trade barriers are an important policy (although certainly not the only one) with inter-regional externalities. In the next section, we provide anecdotal evidence on how regional tariff and non-tariff trade barriers fit the model. Later on in the paper, we also provide more systematic evidence on how regional trade restrictions on alcohol are related to the geographical scope of alcohol producers.

3. Case study evidence on trade barriers

Inter-regional trade barriers are a pervasive phenomenon in Russia: Berkowitz and DeJong (1999) use evidence on regional price dispersion to argue that inter-regional trade barriers were substantial in Russia in the 1990s. Yakovlev (2005) summarizes numerous examples of regional legislation which sets tariff and non-tariff barriers to trade in Russian regional alcohol markets.

Below, we consider two case studies from Russia to illustrate the main prediction of the model: trade restrictions arise in regions where politically-powerful lobbyists have their business interests concentrated within regional borders and do not arise where lobbyists' interests span over multiple regions.

3.1. Uralelektromed

Uralelektromed is the largest copper refinery in Russia; it is the fourth largest company and the only copper refinery in Sverdlovsk Oblast, a region in the Urals in Russia. The main competitors to

Uralelektromed are the copper refineries of Chelyabinsk Oblast, which is a neighboring region. Uralelektromed was very powerful politically in Sverdlovsk Oblast throughout the 1990s. In the spring of 1996, it successfully lobbied for a regional export tariff on products containing copper ore which are its main input. The tariff hurt the copper refineries of neighboring Cheliabinsk Oblast. For example, the biggest copper refinery—Kyshtymsky Copper Electrolytic Plant—relied on inputs produced in Sverdlovsk Oblast by the Sredneuralsky copper-melting plant, as there is no copper ore extraction in Chelyabinsk Oblast (and other neighboring regions except for Sverdlovsk Oblast).

Upon the introduction of the tariff, Uralelektromed became the only profitable customer of Sredneuralsky plant. At that time, Iskander Makhmudov, the controlling owner of Uralelektromed, did not own other assets.

In the second half of 1996, Iskander Makhmudov started building up a vertically and horizontally-integrated copper group which later became one of the largest Russian business groups, UGMK (Guriev and Rachinsky, 2005). Once Makhmudov's group grew beyond Sverdlovsk oblast, the export tariff on products containing copper ore was abolished.[11]

3.2. Russia's beer industry

In 1996–2002, beer was produced in 72 to 76 (depending on the 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.[12] BBH and Sun Interbrew had production facilities in 14 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 regions where they had production plants because of product differentiation: Typically, a regional branch of BBH or Sun Interbrew brewed some of the group's national brands and few local brands, some of which were subsequently marketed to become national brands.[13] 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 to other regions (even to those regions where they had own production facilities). Yakovlev (2005) showed that regional governments' main instrument for restricting beer imports from other regions was legislation on "licensing and accreditation" of beer retailers. Often, these laws included provisions restricting the sale of beer produced in other regions of the country. We have verified that regional laws *never* stipulated trade restrictions if the region had a multi-regional beer producer present at the time in the region.

One may argue, however, that multi-regional groups may be unable to enter regions where local breweries are successful lobbyists (which would suggest reverse causality). To address this issue, we consider trade barriers which were introduced *after* BBH and Sun Interbrew entered the respective regions and *after* 1998 when the federal government introduced new law on accreditation. The importance of the 1998 threshold is that according to the Russian law, the 1998 legal change at the federal level forced all regions to introduce or change their own regional accreditation laws. Thus, all regions introduced corresponding laws in years 1998–1999. By 1998 both BBH and Sun Interbrew established plants in 10 regions. Between 1998 and 2002, *none* of these 10 regions introduced new import restrictions. In contrast, 16% of regions which had no multi-regional companies introduced new trade restrictions.

4. Data

In the remainder of the paper, we test whether there is a *systematic* difference in spillover effects from the regions captured by local industrial interests, the regions captured by multi-regional industrial interests, and the non-captured regions. In what follows, we also provide some quantitative evidence on one of the policy channels through which the type of capture affects performance of firms in the neighboring regions. In this section, we describe the data sources and construction of the main variables.

4.1. The extent and the type of capture

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 multi-regional industrial group, or non-captured. We constrain our analysis to 1996–2003 because (i) the 1992–1995 hyperinflation undermined the quality of firm-level data and (ii) 2004 marked the beginning of substantial political centralization with the abandonment of gubernatorial elections. We use data from three sources.

1. We draw information on the extent of local capture and the names of firms who are the local captors at each point in time in each region from the dataset constructed and described by Slinko, Yakovlev and Zhuravskaya (2005). For each region and each year, this dataset lists large firms which received preferential treatment (such as firm-specific tax breaks, subsidies, subsidized licenses, etc.) from the regional authorities. This dataset is described in Section A.1.1 of the Appendix. Since preferential treatment of a particular firm is an indication of a significant political power of this firm over regional authorities, we call firm-recipients of preferential treatments "local captors."
2. We identify whether each firm from the list of local captors (at any point in time) belonged to an industrial group that had regional or multi-regional scope in 2003 using data on industrial groups collected and described by Guriev and Rachinsky (2005). This dataset is described in Section A.1.2 of the Appendix. For each large firm in Russia, the dataset identifies the ultimate controlling owner in 2003. The data allow us to track whether the firm-captors in each region are controlled by an owner who had productive assets in multiple regions or in a single region in 2003.
3. The data from Guriev and Rachinsky (2005) are a cross-section, whereas our analysis requires panel data. Thus, we collected additional time series information on the controlling owners of each firm-captor between 1996 and 2003 using the "Labyrinth" dataset which contains detailed histories of most large Russian companies (described in Section A.1.3 of the Appendix).

A region in a particular year is defined to be captured by an interest group of a particular type, i.e., regional or multi-regional, whenever: (i) the region is captured, i.e., the number of preferential treatments to firms currently in force 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 multi-regional. A region in a particular year is said to be not captured if there is no preferential treatment in force that year in that region. Table A.1 in the Appendix presents the lists of regions by type of captor over time.[14]

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

[12] 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 little presence in Russia before 2002.

[13] 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.

[14] 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."

There are 103 cases (i.e., regions years) of multi-regional capture, 285 cases of regional capture, and 200 cases of no capture.

In addition, for each region-year, 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 multi-regional groups, or (iii) non-captured. Table A.2 in the Appendix presents these data.

4.2. Indicators of firm performance

The outcomes that we look at are the various indicators of firm performance, i.e., sales, productivity, employment, fixed assets, and return on sales. The data on these basic performance indicators for each firm in each year between 1995 and 2004 come from the Russian Enterprize Registry Longitudinal dataset (RERLD) which covers the basic financial statistics for about 80% of large and medium-size firms in Russia. Summary statistics for the performance variables are presented in Table A.3 in the Appendix.

5. Baseline results: panel fixed effects

5.1. Methodology of baseline regressions

Our aim is to estimate how the extent of inter-regional externalities depends on the scope of local special interests. The estimation strategy is as follows. We consider all the firms which do not have political power, i.e., those that never received any preferential treatment. We study how the average performance of these firms depends on whether neighboring regions are (i) captured by regional groups, (ii) captured by multi-regional groups, or (iii) non-captured controlling for firm fixed effects and other covariates (to be described below). If multi-regional groups internalize inter-regional externalities to a larger extent than regional groups, firm performance should be higher under multi-regional capture of the neighboring regions. We exclude politically-connected firms from the sample in order to eliminate possible direct effects of the changes in the extent of capture on firms-captors and focus on spillover effects on other firms. The inclusion of politically-connected firms back into the sample does not change our results primarily because they are very few compared to the size of the sample and, therefore, have little effect on the estimates.

We look at the capture in the neighboring regions because spillover effects should be higher between neighbors than between regions that are far away from each other. This is true for trade and infrastructure externalities. For example, the gravity model (Linnemann, 1966) predicts higher effects of inter-regional trade barriers on immediate geographical neighbors.[15]

As our model is a partial equilibrium one, all predictions of the model are about the spillover effects on firms in the same or related industries to the industry of the captors. The multi-regional 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.[16] It is important to emphasize that we assume that policies and, therefore, their externalities are industry-specific rather than firm-specific. Under this assumption, captors cannot pass regulations that would benefit only their own foreign subsidiaries and would not affect other firms in the same industry and region. We assume that policies affect all 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 (i) the f's industry has sufficiently high volume of trade with at least one of the industries of the neighboring captors or (ii) 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 OKONH industry classification).[17] We estimate the spillover effects from neighboring regions on firms in both "related" and "unrelated" industries.

We estimate the following panel regression with fixed effects for each firm:

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

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, sales, fixed assets, employment, and return on sales. The main independent variables are: C_{rt}^{MR}, which is the number of neighboring regions of region r that are captured by multinational groups; C_{rt}^{NO}, which is the number of neighboring regions of 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 firm-captors of the neighboring regions; and the interaction terms between the "unrelated industry" dummy, U_{ft}, and the "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 multi-regional 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 multi-regional 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 multi-regional 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 multi-regional lobbying of neighboring regions to be weakened for firms in unrelated industries, i.e., $\alpha_2 < 0$ (since policies effect 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 multi-regionally-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 multi-regionally-captured neighbors constant. The total number of neighbors is controlled for by firm fixed effects as firms do not change location in our data.

Specification 3 includes several firm-level and region-level covariates denoted by $\mathbf{Z}_{ft}$ and $\mathbf{X}_{rt}$, respectively. We control for spatial production externalities and agglomeration effects which are unrelated to the outcomes of lobbying by including the average level of log

[15] In robustness Section 7, we verify that our results are robust to using an alternative test in which we estimate spillover effects from all regions on firms in any particular region weighted by the inverse of the log distance between the regions.

[16] To quote Guriev and Rachinsky (2005), "mostly, the oligarchs' conglomerates are horizontally and vertically integrated." In their Table 1, the vertically integrated business groups constitute 87% output and 77% employment of the oligarchs' business groups.

[17] We refer to a pair of industries as "related" if their volume of trade with each other as a share of total trade of these industries is in the top one-third of the distribution of this indicator for all industry pairs. Eleven percent of all firms are in the industries "related" to the industries of the firm-captors of the neighboring regions.

per capita GDP of the neighboring regions in the set of covariates.[18] 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 multi-regional 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 et al., (2005).[19] 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 multi-regional vs. regional type. It is important to note that the regional vs. multi-regional type of capture in region r, where firm f is located, is a mere control variable in our analysis. Our focus is *not* on how the (multi-regional vs. regional) type of capture affects domestic firms, either captors or non-captors. The predictions of the theory for the domestic non-captors are different for different kinds of public policies. On the one hand, domestic firms benefit from local lobbies restricting competition from outside the region (for this reason, they would prefer regional to multi-regional capture). On the other hand, the multi-regional lobbies promote infrastructure investment that connects different regions, e.g., roads, railroads, or communications. Such investments may help domestic firms to export abroad. For that reason, domestic non-captors would prefer multi-regional to regional capture. In contrast to domestic firms, for the "foreign" firms (i.e., firms in the neighboring regions to region r) these two effects work in the same direction; and this is the focus of our study.[20]

We also do not estimate the effect of capture on the captors themselves; using the very same dataset, Slinko et al., (2005) have shown that captors do benefit from capture. For the baseline regressions, we exclude firms which received preferential treatments from the sample. As we mentioned above, our estimates do not depend on whether we exclude captors from the sample or leave them in, therefore, we are not worried about selection bias introduced by exclusion of captors.

We allow for clusters in error terms at the level of regions. Altogether there are 68 clusters. Since the asymptotic properties of estimators of the magnitude of standard errors in regressions with clusters depend on the number of clusters rather than on the number of observations, we have also experimented with specifications which have a larger number of clusters. In particular, we estimated the same regressions with clusters at the level of industry-region and at the level of individual firms. In both cases, the standard errors of the coefficients of interest are substantially smaller than in our baseline specification. Thus, as a baseline, we report the most conservative results in terms of statistical significance.

Finally, we drop outliers 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 distributions.

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 in the other regions. The results are robust to exclusion of control variables that describe region r (which, therefore, potentially can be endogenous to firm performance in the same region). In Sections 6 and 7, we discuss endogeneity issues in more detail, suggest an instrument for the size and scope of interest groups in cross-section and address potential alternative explanations of our results.

5.2. Baseline results

The results are presented in Table 1. Our main hypothesis is supported by the data. A change from regional to multi-regional capture of a region is associated with higher firm performance in the neighboring regions. The estimates of the coefficients on the number of neighbors captured by multi-regional 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 *multi-regional* 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 annual 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, a 1.9% increase in sales, a 1.4% increase in employment, and a 1.6% increase in fixed capital stock. The effect on returns-on-sales is much smaller in magnitude, negative, and insignificant; but this variable is based on the accounting profits data, which are widely 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 multi-regional capture of neighbors, an increase in the number of non-captured neighbors (holding the number of multi-regionally-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.

Overall, as predicted by our simple model, we find that spillover effects from regions with multi-regional 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 externalities from non-captured regions are larger than that of regionally-captured regions and smaller than multi-regionally-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). In particular, 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 (Shleifer and Vishny, 1994).[21]

5.3. Test for the trade policy channel in the alcohol market

We have no systematic data to test for the policy channels through which the geographical scope of lobbyists affects inter-jurisdictional

[18] We are grateful to the referee for pointing out the importance of this control variable.

[19] For every region and year, we calculate the concentration of preferential treatments and number of preferential treatments. Then, we take the simple averages of these measures of among the neighboring regions for every region in every year and use them in the regression analysis.

[20] We have checked the effect of the type of capture on domestic non-captors and did not find a robust effect. Also in line with our predictions, the effect of type of capture on domestic non-captors is significantly weaker than the effect on the foreign firms.

[21] It is important to note that there is no clear prediction for the difference between the effects multi-regionally-captured and non-captured neighbors (see the discussion in Section **2.2**). In most cases, the magnitude of the effect of an increase in multi-regionally-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.

Table 1
Fixed effects OLS: firm performance as a function of the type of neighbors' capture.

	(1)	(2)	(3)	(4)	(5)
	Productivity	Sales	Fixed assets	Employment	Return on sales
Number of neighbors captured by MR group	0.0127	0.0192	0.0157	0.0142	−0.003
	[0.0073]*	[0.0106]*	[0.0078]**	[0.0071]**	[0.0021]
Number of neighbors captured by MR group unrelated industry	−0.0344	−0.041	−0.0029	−0.008	0.0005
	[0.0094]***	[0.0107]***	[0.0079]	[0.0076]	[0.0024]
Number of non-captured neighbors	0.0114	0.0119	0.0028	−0.005	0.0026
	[0.0092]	[0.0124]	[0.0077]	[0.0055]	[0.0022]
Number of non-captured neighbors unrelated industry	−0.0199	−0.0201	0.0033	0.0023	−0.0038
	[0.0064]***	[0.0075]***	[0.0051]	[0.0031]	[0.0023]
Unrelated industry	0.0012	0.0025	−0.0003	0.0027	−0.0021
	[0.0115]	[0.0107]	[0.0092]	[0.0072]	[0.0028]
Mean concentration of PTs in neighbors	0.0173	0.028	−0.0119	0.0033	−0.0051
	[0.0393]	[0.0426]	[0.0406]	[0.0189]	[0.0117]
Mean number of PTs in neighbors	0.0148	0.0178	0.0027	−0.0036	0.0022
	[0.0100]	[0.0129]	[0.0074]	[0.0053]	[0.0022]
Concentration of PTs in own region	0.0023	0.0274	0.0072	0.0133	0.0071
	[0.0291]	[0.0337]	[0.0169]	[0.0150]	[0.0076]
Number of PTs in own region	0.0055	0.0111	0.0038	0.0018	0.0016
	[0.0040]	[0.0063]*	[0.0027]	[0.0027]	[0.0012]
MR capture in own region	−0.0274	−0.0259	0.001	−0.0013	−0.004
	[0.0181]	[0.0186]	[0.0126]	[0.0082]	[0.0030]
No capture in own region	0.0042	0.0253	0.0055	0.0094	0.009
	[0.0223]	[0.0282]	[0.0185]	[0.0143]	[0.0066]
log GDP per capita of neighbors	0.2183	0.1917	0.0588	−0.0398	0.0561
	[0.1320]	[0.1410]	[0.0901]	[0.0641]	[0.0288]*
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	102,029	110,253	104,573	111,723	81,656
R-squared	0.10	0.09	0.73	0.09	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%.

externalities in the general case. Such data exist for Russia's alcohol market (i.e., liqueur, vine and beer). Yakovlev (2005) collected panel data on the presence of regional policies and regulations which give preferential treatment to alcohol producers from within the region over alcohol producers from outside the region for 74 regions for the period of 1995–2002. These policies effectively erected import restrictions for alcohol beverages produced outside the region. Such policies were established in 22 regions and 65 region-year observations (11% of the sample). These policies included the following: 1) regulation which required regional retailers to sell more than a certain amount of locally-produced alcohol (23% of all cases of such regional regulations); 2) an additional sales tax levied on alcohol beverages produced outside the region (18%); 3) sales tax breaks for alcohol beverages produced locally (18%); 4) tax breaks on other taxes given to domestic producers (9%); 5) additional regulatory requirements for retailers selling alcohol from outside the region (8%); 6) prohibition of retail sales of alcohol produced out-of-region (3%); and other preferential treatments of domestic producers (20%).

We code the import restrictions variable (I_{rt}) as a dummy indicating the presence of such restrictions in each region in a particular year.[22] Using our own dataset, we were able to collect data on whether the major alcohol producers in each of 71 region belonged to a multi-regional group (which turned out to be the case for 13% of region-year observations).

In order to verify that having multi-regional and regional lobbies in a region result in regional policies with different level of inter-jurisdictional externalities, we regress the dummy for import restrictions of alcohol in a region and year (I_{rt}) on the dummy for the presence of multi-regional alcohol lobby (L_{rt}^{MR}) controlling for year and region fixed effects, log of per capita gross regional product, the share of alcohol in the regional industrial production, and the dummy for whether the region is captured (C_{rt}^{NO}). The exact specification is as follows:

$$I_{rt} = \varphi_r + \rho_t + \alpha_1 L_{rt}^{MR} + \alpha_2 C_{rt}^{NO} + \alpha_3' \mathbf{W}_{rt} + \varepsilon_{rt}.$$

Here $\mathbf{W}_{rt}$ denotes control variables. As above, we allow for clusters in ε_{rt} at the level of the region. We estimate this equation using OLS even though the dependent variable is binary because probit and logit

Table 2
Fixed effects OLS: import restrictions on alcohol as a function of the type of region's capture.

	(1)	(2)
Dependent variable:	Import restrictions on alcohol	
Alcohol lobby in the region is MR	−0.13	−0.122
	[0.054]**	[0.057]**
Region is not captured	−0.069	−0.067
	[0.035]*	[0.036]*
Log GRP per capita		0.099
		[0.108]
Share of alcohol in regional industrial output		−0.154
		[0.774]
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	563	563
Number of regions	71	71
R-squared	0.06	0.06

Note: Dependent variable is the dummy indicating the presence of import restrictions in the alcohol industry. Linear probability model. Robust standard errors adjusted for clusters at the level of regions in brackets.
* Significant at 10%.
** Significant at 5%.

[22] Our results are unaffected by whether we use the dummy for the presence of restrictions or the number of restrictions. In only one case, in Sakha-Yakutia region, there was more than one restriction contemporaneously: a tax break for local firms and a requirement for retailers to have at least 80% of sales from locally-produced alcohol.

Table 3
Fixed effects OLS: firm performance in alcohol industry as a function of the import restrictions of neighbor regions.

	(1)	(2)	(3)	(4)	(5)
	Productivity	Sales	Fixed assets	Employment	Return on sales
Import restrictions in neighbors	−0.123	−0.132	−0.072	0.001	−0.004
	[0.068]*	[0.077]*	[0.026]***	[0.027]	[0.009]
Import restrictions in own region	−0.169	−0.196	0.062	−0.022	0.002
	[0.184]	[0.198]	[0.028]**	[0.027]	[0.008]
Mean concentration of PTs in neighbors	0.051	0.026	0.012	−0.009	−0.012
	[0.109]	[0.115]	[0.039]	[0.046]	[0.017]
Mean number of PTs in neighbors	0.029	0.031	0	0.001	0.003
	[0.020]	[0.024]	[0.005]	[0.008]	[0.002]
Concentration of PTs in own region	0.049	0.101	−0.017	0.041	0.008
	[0.116]	[0.108]	[0.028]	[0.030]	[0.012]
Number of PTs in own region	0.008	0.012	−0.001	0.007	0.002
	[0.007]	[0.009]	[0.004]	[0.004]*	[0.002]
No capture in own region	0.016	0.02	−0.039	0.034	0.012
	[0.059]	[0.064]	[0.027]	[0.031]	[0.008]
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	12,338	13,151	13,279	13,143	10,400
Number of firms	4626	4829	4728	4805	4434
R-squared	0.21	0.16	0.77	0.04	0.08

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%.

models—that potentially could give better fit and higher efficiency—suffer from incidental parameters problem when time span of the panel is small (Fernandez-Val, 2007). We, however, verified that our results are similar if we use the probit or logit instead of the OLS.

Table 2 presents the results. The presence of multi-regional alcohol lobby in the region significantly reduces the probability of having import restrictions on alcohol in the region by 12 percentage points (significant at 5% level). In addition, the probability of import restriction is 7 percentage points higher for captured regions than non-captured regions.

The next logical step is to show that firm performance in alcohol industry depends on the import restrictions in the neighboring regions. In order to do that, we regress firm performance in alcohol industry on the dummy for presence of import restrictions in the own region (I_{rt}) and on the share of the neighboring regions with import restrictions controlling for firm and year fixed effects, the total number and the concentration of preferential treatments in the own and neighboring regions, and no-capture dummy. Thus, the estimated equation is an augmented and simplified version of specification (3). Instead of a measure of multi-regional capture in the own and neighboring states, our main explanatory variables now are the outcomes of lobbying, i.e., the actual resulting policies regarding import restrictions on alcohol. The simplifications come from the fact that we focus on one industry only.

The results are presented in Table 3. Again, they are consistent with our story. Import restrictions in the neighboring regions significantly reduce productivity, sales, and capital of alcohol producers, whereas their employment and return on sales are not significantly affected. The magnitude of these results is as follows: alcohol producers have 12, 13 and 7% higher productivity, sales, and fixed assets in times when their region is surrounded by neighbors with no trade restrictions compared to the times when all neighboring regions introduce import restrictions. Interestingly, alcohol import restrictions in the own region have significant positive effect only on the size of capital stock of firms and does not significantly affect other performance indicators once we control for preferential treatments; they do, however, negatively affect performance of neighboring firms with these controls.

Overall, the results of a closer examination of policies that differentially affect home and out-of-region firms in the alcohol industry confirm our hypothesis that multi-regional lobbies result in policies that have lower negative externalities on firms in neighboring regions.

6. Cross-region analysis and instrumental variables

So far we have considered within-region variation in the type of industrial lobbies. All our regressions thus far included fixed effects for regions. Note that in firm-level regressions, firm fixed effects imply regional fixed effects 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 because the fixed effects specifications allow to control for unobserved regional heterogeneity. Yet, there are two reasons why it is interesting to know whether the results of cross-sectional analysis are consistent with our hypotheses. First, the cross-sectional variation in regional vs. multi-regional scope of local capture is vast. Second, there are instrumental variables which single out (arguably) exogenous sources of variation in the extent and the type of capture. We have only been able to find such instruments for cross-section specifications but not for the panel ones.

There are two potential concerns about the endogeneity of the type and extent of interest groups. There could be spatial production externalities which are not caused by outcomes of lobbying, but are correlated with the type and extent of interest groups (omitted variables). Also, the formation of interest groups may depend on firm performance (reverse causality). We argue that for our baseline specification these concerns are not very important. Our argument rests on two premises. First, most spatial production externalities are primarily cross-sectional and, therefore, are controlled for by fixed effects; and the remaining ones are taken into account by controlling for neighbor's gross regional product. Second, as we discussed above, the formation of interest groups in Russia was driven mostly by the interaction between ad-hoc privatization process and pre-existing Soviet production chains.[23] If their assumptions are not warranted, our baseline estimates should not be interpreted as causal because there are no valid instruments for the within-region variation in the scope of interest groups. In this section, we suggest instruments which rely on cross-sectional variation. The next subsection presents basic OLS results

[23] We address additional endogeneity concerns in the Section 7 below.

Table 4
Between effects OLS: firm performance as a function of the type of neighbors' capture.

	(1)	(2)	(3)	(4)	(5)
	Productivity	Sales	Investment	Employment	Return on sales
Share of neighbors captured by MR group	0.160	0.268	0.144	0.130	0.052
	[0.056]***	[0.065]***	[0.035]***	[0.045]***	[0.014]***
Share of neighbors captured by MR group unrelated industry	−0.065	−0.117	−0.08	−0.111	−0.02
	[0.053]	[0.071]	[0.032]**	[0.043]**	[0.012]
Share of non-captured neighbors	0.203	0.267	0.273	0.11	0.078
	[0.139]	[0.116]**	[0.064]***	[0.080]	[0.028]***
Share of non-captured neighbors unrelated industry	−0.024	0.016	−0.061	−0.085	−0.03
	[0.064]	[0.076]	[0.043]	[0.060]	[0.018]
Unrelated industry	−0.002	0.032	−0.028	0.016	0.015
	[0.017]	[0.016]**	[0.010]***	[0.011]	[0.004]***
Mean concentration of PTs in neighbors	−0.19	−0.024	0.089	−0.031	−0.008
	[0.167]	[0.160]	[0.078]	[0.125]	[0.034]
Mean number of PTs in neighbors	−0.008	0.013	0.014	−0.007	0.001
	[0.029]	[0.025]	[0.014]	[0.014]	[0.005]
Concentration of PTs in own region	−0.006	0.038	−0.067	−0.08	−0.035
	[0.057]	[0.073]	[0.045]	[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	−0.014	−0.006	0.001	0.042	−0.011
	[0.031]	[0.036]	[0.031]	[0.033]	[0.006]*
No capture in own region	−0.014	−0.028	−0.056	−0.044	−0.026
	[0.042]	[0.052]	[0.053]	[0.039]	[0.009]***
Total number of neighbors	−0.009	−0.003	−0.009	−0.002	0.000
	[0.010]	[0.011]	[0.007]	[0.008]	[0.002]
Log GDP per capita of neighbors	0.092	0.032	−0.044	−0.004	−0.008
	[0.044]**	[0.052]	[0.029]	[0.043]	[0.008]
Regional controls	Yes	Yes	Yes	Yes	Yes
Home and neighbor's industry structure controls, and 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%.

of cross-section regression and the following subsection describes the instruments and presents instrumented results.

6.1. OLS, between effects

We use the same sample, i.e. the full sample of all firms excluding the captors. 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:

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

The upper bars denote over-time averages between 1996 to 2003 of the residuals from linear regressions of the corresponding variables (described above) on time dummies.[24] 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 ($\mathbf{Z}$ and $\mathbf{X}$) 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 errors to allow for clusters in error terms at the level of regions and the results are robust to having a larger number of smaller clusters.

The results of the plain OLS between-effects regressions are presented in Table 4. Again, we find that spillovers from regions captured by multi-regional groups are significantly more benign to firms in related-to-captors industries in the neighboring regions compared to externalities from regions captured by regional groups. There is no effect on firms in unrelated industries. The magnitude of OLS cross-sectional estimates of the effects is as follows: the difference in performance of firms operating in related industries in regions with all neighbors captured by multi-regional groups and in regions with all neighbors captured by regional groups is 16% for productivity, 27% in sales, 14% for investment, 13% for employment, and 5% for return on sales in firms. There effects are 2.5 to 4-times larger than the effects found in panel fixed effects regressions.[25] This increase in the magnitude should be expected as the measurement error is a lot higher when we consider within-region variation.

As our model predicts, the estimated externalities from regions that are not captured are significantly more benign than externalities from regions captured by regional industrial groups. In contrast to

[24] 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.

[25] To compare the magnitude of the effects, one has to divide the between-effects estimates by the average number of neighboring regions, namely 3.5, as the main explanatory variable in fixed effects regression is the number of multi-regionally-captured neighbors and in the between-effects specification, it is their share.

Table 5
OLS: time of privatization and concentration as determinants of the type and extent of capture.

	MR captor	MR captor	Number of PTs	Number of PTs
Panel A: firm level				
Privatized after 1993	0.015	0.015		−0.009
	[0.008]*	[0.008]*		[0.008]
Relative size (share of sales in total)		0.737	0.266	0.248
		[0.049]***	[0.040]***	[0.044]***
Observations	7518	7300	9368	7300
R-squared	0.22	0.25	0.05	0.05
Controls	Industry and year fixed effects			
Panel B: regional level				
Share of large firms privatized after 1993	0.107	0.117		−0.102
	[0.063]*	[0.064]*		[0.032]***
Concentration (HHI) of sales		0.265	−0.173	−0.222
		[0.219]	[0.096]*	[0.095]**
Observations	480	480	480	480
R-squared	0.85	0.85	0.18	0.19
Controls	Dummy republic, initial log (grp per capita), and initial level of education, year fixed effects, and industry structure of the region			

Note: robust standard errors in brackets.
* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

fixed effects estimation, this difference is statistically significant for sales, investment and return on sales. 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 multi-regionally-captured neighbors, but that latter difference is statistically insignificant.

6.2. IV, between effects

As was noted by Slinko et al. (2005), the main predictor of whether a firm receives preferential treatment is its size; and the main predictor of whether a region is captured is the concentration of sales (and/or employment) among the largest firms in the region. Thus, we could use variation in the initial level of industrial concentration as a source of exogenous variation in the extent of capture as long as we control for initial performance.

To find instruments for the type of the interest group lobbies—regional vs. multi-regional—we turn to the history of Russia's privatization (Boycko et al., 1995). The main method of privatization in the very first wave of Russia's privatization program in 1992–1993 was privatization to insiders (i.e., employees and management) of firms. In the Russian National Survey of privatized firms (Blasi et al., 1997), conducted in the end of 1993 and the first quarter of 1994, managers and workers jointly owned 65% of the shares with 13% owned by the government and only 21% by the outsiders.

Later on, outsiders had greater access to privatization auctions, both voucher auctions and open cash sales (including so called "investment tenders" that started in 1994). Boycko et al. (1995) mention the June 1994 voucher auctions as the first incidence where foreign investors actively participated in privatization of Russian companies. Also, the notorious loans-for-shares privatization of 1995 gave control over several largest assets directly to the owners of the biggest Russia's financial–industrial groups. Overall, the history of Russia's privatization suggests that enterprises that were privatized in the first place were less likely to become members of multi-regional industrial groups than enterprises that were privatized later on. The reason for this is as follows. Privatization to insiders commonly led to accumulation of control in the hands of the management; whereas open voucher auctions and open cash sales allowed outsiders to get control over enterprises more easily, and therefore, made it more likely that the firm ends up to be a part of a larger industrial group. As Russian capital markets were imperfect, the initial allocation of ownership had long-lasting implications for the structure of business groups.

We use information about the time of privatization from Brown et al. (2006) to construct a dummy for whether each firm in our data base of the largest firms in each region was privatized after 1993. Then, we verify a positive correlation between whether a firm is a multi-regional captor and the dummy for being privatized after 1993. Columns 1 and 2 of Panel A of Table 5 present these correlations for a pooled sample of all firms in all available years controlling for industry and year fixed effects and with and without control for the relative size of the firm. Being privatized after 1993 increases the probability that the firm is a member of a multi-regional industrial lobby by 1.5 percentage points (significant at 10% level).[26] Columns 3 and 4 show that the total number of preferential treatments for a firm is significantly related to its relative size and unrelated to the time of privatization.

For our analysis, we need to find instruments for the type of capture and the extent of capture at the regional level. Thus, we take the concentration of sales among the largest firms as the main predictor of whether a region is captured. We consider the average share of largest firms privatized after 1993 as the predictor of whether a region is captured by a multi-regional group. Panel B of Table 5 illustrates these correlations for a pooled cross-section of all regions and years controlling for administrative status of the region, initial gross regional product per capita, initial level of education, year fixed effects, and industry structure of the region. A dummy for multi-regional capture is positively related to the share of firms in the region privatized after 1993 (significant at 10% level) and the no-capture dummy is negatively significantly related to regional industrial concentration. Thus, we re-estimate specification (4) using the average share of firms in the neighboring regions privatized after 1993 and the average industrial concentration of neighboring regions as instruments for the share of neighbors captured by a multi-regional group and the share of non-captured neighbors, respectively. We also instrument the type and the extent of own region capture with the share of firms privatized after 1993 and the initial industrial concentration of own region. The correlations between the endogenous regressors and the instruments are rather weak. They are highly statistically significant (*F*-statistics from all the first stages are above 100) only when we use clusters at the level of firms, rather than

[26] Overall 15.9% of the largest firms are the members of a multi-regional industrial groups.

Table 6
Between effects IV: firm performance as a function of the type of neighbors' capture.

	(1)	(2)	(3)	(4)	(5)
	Productivity	Sales	Investment	Employment	Return on sales
Share of neighbors captured by MR group	0.946	2.231	1.14	2.406	−0.096
	[0.783]	[1.131]**	[0.500]**	[0.833]***	[0.134]
Share of neighbors captured by MR group unrelated industry	0.342	1.236	0.715	1.655	0.066
	[0.497]	[0.602]**	[0.416]*	[0.506]***	[0.107]
Share of non-captured neighbors	−0.535	−1.329	−1.146	−1.023	0.171
	[0.642]	[1.169]	[0.538]**	[0.813]	[0.099]*
Share of non-captured neighbors unrelated industry	1.767	4.274	2.51	4.206	−0.231
	[1.704]	[2.743]	[1.170]**	[1.790]**	[0.278]
Unrelated industry	0.1	0.178	0.064	0.117	−0.001
	[0.057]*	[0.122]	[0.034]*	[0.060]*	[0.010]
Mean concentration of PTs in neighbors	−1.123	−2.472	−1.693	−1.996	0.139
	[0.865]	[1.543]	[0.706]**	[1.072]*	[0.138]
Mean number of PTs in neighbors	−0.142	−0.285	−0.227	−0.286	0.022
	[0.123]	[0.193]	[0.101]**	[0.154]*	[0.019]
Concentration of PTs in own region	−0.51	−0.39	0.021	0.801	0.018
	[0.157]***	[0.267]	[0.135]	[0.274]***	[0.045]
Number of PTs in own region	−0.106	−0.153	−0.053	0.032	0.011
	[0.032]***	[0.073]**	[0.030]*	[0.032]	[0.011]
MR capture in own region	−0.547	−1.708	−0.746	−1.157	0.085
	[0.459]	[0.920]*	[0.276]***	[0.455]**	[0.081]
No capture in own region	−0.804	−1.25	−0.301	0.234	0.074
	[0.240]***	[0.589]**	[0.200]	[0.235]	[0.076]
Total number of neighbors	0.055	0.166	0.101	0.205	−0.01
	[0.071]	[0.108]	[0.047]**	[0.081]**	[0.010]
Log GDP per capita of neighbors	0.112	0.057	−0.042	−0.065	−0.022
	[0.031]***	[0.080]	[0.027]	[0.042]	[0.010]**
Regional controls	Yes	Yes	Yes	Yes	Yes
Home and neighbor's industry structure controls, and initial performance	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
All *F*-stats for excluded IVs are above 100	Yes	Yes	Yes	Yes	Yes
Observations	24,999	26,536	24,466	26,448	23,289

Note: dependent variables are expressed in logs. Robust standard errors adjusted for clusters at the level of firms in brackets.
* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

regions. If we include clusters by region they are not significant. Thus, the results of our instrumental variable regressions should be interpreted merely as suggestive because our instruments are too weak to allow us to take into account the quite likely within-region correlation in the error terms.[27]

The results of IV estimation are presented in Table 6. The main prediction of our model is again confirmed: the share of neighbors captured by multi-regional groups has a positive significant effect on sales, investment and employment of firms in related to captors industries. The coefficient on productivity is also positive, but statistically imprecisely estimated. The statistical significance of these results crucially depends on allowing for clusters at the firm rather than regional level. Nonetheless, qualitatively, the results of the OLS between effects are confirmed by IV estimates. There are two noticeable differences, however. First, the magnitude of the coefficients increases substantially. This may be a legitimate effect of accounting for the measurement error bias in instrumented regressions or, on the contrary, may be a result of the bias due to a possibility of a weak instruments problem. Second, the effects on firms in the unrelated industries are also large and statistically significant which is not the case for any of our OLS estimates. Again, this may be a legitimate result which shows that the inter-regional externalities created by industrial lobbyists reach across industry lines; however, this can be also driven by biases due to weak instruments problem. As we noted above, we tend to interpret the IV results merely as suggestive.

[27] Another potential problem with our instruments is the endogeneity of the timing of privatization. Yet, it is unlikely to be a serious issue for our analysis because (i) we look at the performance of firms in the neighboring regions and we can safely assume that the timing of privatization of any particular firm was unrelated to the prediction about distant future performance of firms in the *neighboring* regions; and (ii) we control for the initial performance.

Overall, the main prediction of our model is confirmed both by the panel estimates and cross-section estimates.

7. Robustness

In this section we address various alternative explanations for our results and establish robustness of the results to using alternative measures and specifications.

Differences in the political power of lobbyists. One could imagine that multi-regional and regional groups have different capacities of influencing regional authorities, i.e., political power of these two types of lobbyists differ, and it is this difference—rather than the difference in geographical scope of interest group lobbies—that drives our results. To address this point, we compare the number of preferential treatments received by all firm-members of the regional and multi-regional groups from the Guriev and Rachinsky (2005) dataset. It turns out that the likelihood of getting treated preferentially by regional authorities does not depend on whether a firm is controlled by a multi-regional or a regional group. The main predictor of whether a firm is treated preferentially is its size. We have also checked that the interaction between the size of the firm and the multi-regional 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 baseline regressions we control for political power of lobbyists with the average number and average concentration of preferential treatments among neighbors.

Differences in the industrial composition of lobbyists. Multi-regional 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 multi-regional groups vs. regional groups: multi-regional 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 multi-regional 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 regression equations.

The effect of preferential treatment on group members. 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, firm-members of multi-regional 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, as a robustness check, we include a dummy that equals one if the region has firm-members of multi-regional groups that capture neighboring regions. The addition of this covariate also does not change the results. Note that this story (if important) would bias the coefficient of interest downwards, and, therefore, work against our predictions.

Agglomeration. Since we test for the presence of spacial externalities, one should make sure that agglomeration externalities do drive our results. The results could also be driven by the presence of industrial clusters which span across regional borders and have positive external effects on firm productivity. Our presumption is that the inclusion of the firm fixed effects (and region fixed effects) and GRP of neighbors controls for most of the agglomeration effects. In addition, as a robustness check we include the following two control variables: 1) the total output of the industry to which firm *f* belongs in region *r*, and 2) the total output of the industry to which the firm *f* belongs in the regions that are neighbors to region *r*. The results are robust to inclusion of these covariates.

The endogeneity of geographical scope of lobbies to regional policy. Regional governors may have different ideological stands on the issue of trade openness: those who prefer open trade and those who prefer protectionism. In this case, one would expect to observe both the higher positive externalities and the higher likelihood of multi-regional groups in the regions where governors prefer open trade as a result of higher openness of these regions. Despite the fact that theoretically this is a serious concern, in practice, it has no meaning in application to Russia for the following two reasons. First, evidence suggests that governors of Russia's regions are completely opportunistic and their policy is a result of interest group politics (e.g., Akhmedov and Zhuravskaya, 2004; Slinko et al., 2005). Second, the process of industrial group formation was dictated primarily by technological demands, as owners of large industrial assets acquired upstream and downstream plants in their production chains (e.g., (Guriev and Rachinsky, 2005), the location of most of which was predetermined by the Soviet planning system. These are important reasons why Russia provides the best testing ground for our analysis. Nonetheless, as a partial response to this concern, we included dummies for each individual governor as additional regressors into our baseline regressions and obtained similar results.

An alternative measure of multi-regional capture based on gravity model. Instead of looking at externalities from immediate geographical neighbors, we apply the logic of the gravity model (i.e., that trade is inversely related to transportation costs) to construct an alternative measure of the geographical scope of capture of the regions which are the trading partners of each particular region. For each region *r* the alternative measure of the extent of multi-regional capture of its trading partners is equal to the sum over all regions but *r* of the dummies indicating whether these regions are captured by a multi-regional group weighted by the inverse of the log distance between these regions and the region *r*. Formally, $\tilde{C}_r^{MR} = \sum_{j \neq r} \frac{D_j^{MR}}{\log(DIST_{rj})}$, where D_j^{MR} is a dummy which equals one if region *j* is captured by a multi-regional group; and $DIST_{rj}$ is the distance between regions *r* and *j*. The effect of the variable C_r^{MR} on the performance of firms in region *r* is similar to the effect of geographical neighbors being captured by multi-regional groups in regressions with firm fixed effects.

An alternative measure of "related" industry excluding the "same" industry. In the baseline specification, the definition of a related industry includes the same industry. The rationale for this is that industries are defined rather widely. (Altogether there are 18 industries in the official Russian 2-digit classification which is used as a basis for the input-output table.) As a result, there is a lot of within-industry trade between upstream and downstream producers. However, the results go through if we redefine "related" industry so that it excludes the same industry (and only includes other industries which have sufficiently high volumes of trade with a given industry).

Different sets of covariates. We also tried to include many other control variables for the own region and the neighboring regions; this did not change the results. In addition, the exclusion of all characteristics of the own region—which may be endogenous to firm performance in the region—does not change the main results. Overall, the results seem to be robust to alterations in the set of covariates.

8. Conclusions

Our main finding is that in a federation, local public policy with inter-state externalities depends on whether business interests of local lobbies span over many states or are concentrated in a single state. Multi-state lobbies internalize externalities between states to a larger extent than the local lobbies. We show that the performance of an average firm significantly improves if neighboring states are influenced by multi-state (compared to local) industrial lobbies. States with governments not under influence of any special industrial interests generate externalities that are in between the ones from states influenced by state and multi-state interests; yet, these differences are not statistically significant.

The results shed light on the workings of a federation in which the conditions of the "market-preserving" federalism do not hold: a common market is not enforced. First, decentralization under these conditions involves substantial costs to firms due to large inter-state externalities. Second, political influence of large (multi-state) businesses helps to alleviate these costs. The role of multi-state interest groups, therefore, is similar to that of strong national political parties (Riker, 1964); both make local public officials internalize the external effects of local policies, at least partially.

Multi-regional lobbies may internalize the externalities that even the non-captured subnational governments do not. In particular, non-captured governments may impose non-trivial trade barriers due to the terms-of-trade effect; hence multi-regional interests groups may promote even less protectionist policies than non-captured governments. On the other hand, the multi-regional interest groups may fail to internalize all the inter-regional spillovers of local policies. Thus, the magnitude of the difference between the effects of inter-regional externalities from regions captured by multi-regional groups and regions captured by regional groups is just an estimate of the lower bound for the microeconomic effects of inter-regional externalities in a federation. Overall, our results point to the importance of accounting for the presence of the private mechanisms in measuring the extent of terms-of-trade externalities.

Our results imply that the federal government should encourage the formation of multi-regional business groups. In particular, the province-level barriers for mergers and acquisitions should be

brought down. Certainly, the multi-regional groups may grow too big to influence the policymaking at the federal level. But this is a problem that is beyond the scope of our paper.

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 inter-state trade in a federation and international trade; yet, the former provides an important testing ground for the latter.

Acknowledgements

We thank Andy Atkeson, Abhijit Banerjee, Erik Berglof, Kai Konrad, Randal Morck, Gerard Roland, Enrico Perotti, Andrei Shleifer, conference and seminar participants in the WB, NES, CEFIR, Kiel Institute for the World Economy, and CORE for helpful comments. We are grateful to anonymous referees for constructive criticisms. We also thank Alexander Rumyantsev for excellent research assistance.

A Appendix. Data sources

A.1.1. Dataset on 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. A firm 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" (http://www.consultant.ru/Software/Systems/RegLaw). Note that preferential treatment data have the following drawbacks: (1) the importance of different preferential treatments cannot by quantified (i.e., one cannot compare the benefits firms get from different preferential treatments); (2) preferential treatment is identified only if the texts of the law contains direct reference to the firm. Despite the drawbacks, the measures of regional capture correlate well with other measures of capture (available only for cross-section of Russian regions). For a detailed description of the data see Slinko, Yakovlev and Zhuravskaya (2005).

A.1.2. Cross-section dataset on ownership and control of firms

We start with the ownership data from Guriev and Rachinsky (2005). This dataset was built by the World Bank's Russia Country Economic Memorandum project. It identified the structure of control for about 1700 large firms in 45 sectors of Russian economy. These firms represented 75% of Russian industrial output. Economists and business journalists interviewed investment banks, consultancies, business advisors, information agencies and other institutions to identify the main controlling owners of each firm as well as subsidiaries owned by the firms. This, in turn, generated a new set of firms to be studied — subsidiaries and corporate owners. A chain would stop downward when a firm owned no subsidiaries and would stop upward when an ultimate beneficiary was identified. Finally, the data were cross-checked using publicly accessible information.

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

Table A.1 (*continued*)

Region	1996	1997	1998	1999	2000	2001	2002	2003
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: multi-regional, regional, and no capture, respectively. "MR + R" indicates that one half of preferential treatments a region goes to a multi-regional 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

(*continued on next page*)

Table A.2 (*continued*)

		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
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: multi-regional, regional, and no capture, respectively. When MR + R + NO > N, some of the neighbors are classified as captured by both regional and multi-regional groups.

Table A.3
Number of neighbors by types of capture.

Variable	Obs	Mean	Std. dev.	Min	Max
Region X year level					
No capture in own region	489	0.352	0.478	0	1
MR capture in own region	489	0.178	0.383	0	1
Share of firms privatized after 1993	483	0.464	0.310	0	1
Concentration (HHI) of sales	493	0.197	0.082	0.116	0.611
Initial Log(GRP) per capita	483	8.083	0.425	6.721	9.658
Dummy- Republic	489	0.221	0.415	0	1
Initial share of people with higher education	489	11.647	2.745	6.8	29.9
Concentration of PTs in own region	489	0.441	0.301	0.2	1
Number of PTs in own region	489	1.898	2.125	0	12
Mean concentration of PTs in neighbors	489	0.469	0.168	0.2	1
Mean number of PTs in neighbors	489	1.695	1.091	0	6
Share of trade in total industrial output	480	0.119	0.173	0.015	1
Import restrictions on alcohol	592	0.110	0.313	0	1
Alcohol lobby in the region is MR	592	0.133	0.340	0	1

Table A.3 (*continued*)

Variable	Obs	Mean	Std. dev.	Min	Max
Firm X year level					
Log sales	110,483	8.155	2.259	-1.889	16.973
Log employment	111,723	4.816	1.450	0.000	11.586
Log productivity	102,880	3.308	1.362	-7.614	10.792
Log fixed assets	100,168	8.567	2.354	-1.700	17.672
Return on sales	821,65	-0.025	0.249	-1.000	1.000
Share of trade in total industrial output	110,008	0.107	0.131	0.005	1
Number of neighbors captured by MR group	111,723	1.122	0.834	0	5
Number of non-captured neighbors	111,723	1.725	1.262	0	6
MR capture in own region	111,723	0.167	0.373	0	1
No capture in own region	111,723	0.299	0.458	0	1
Concentration of PTs in own region	111,723	0.462	0.305	0.2	1
Mean number of PTs in neighbors	111,723	1.811	1.043	0	6
Mean concentration of PTs in neighbors	111,723	0.470	0.158	0.2	1
Unrelated industry	110,483	0.475	0.499	0	1
Firm level					
Concentration (HHI) of sales	24999	0.173	0.078	0.106	0.607
Share of firms privatized after 1993	24999	0.479	0.300	0	1
Mean concentration (HHI) of sales in neighbors	24999	0.175	0.037	0.115	0.282
Mean share of firms priv-d after 93 in neigbors	24999	0.510	0.196	0.206	1

A.1.3. Dataset on histories of Russian companies

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

References

Akhmedov, Akhmed, Zhuravskaya, Ekaterina, 2004. Opportunistic political cycles: test in a young democracy setting. Quarterly Journal of Economics 119 (4), 1301–1338.

Bagwell, Kyle, Staiger, Robert W., 2006. What Do Trade Negotiators Negotiate About? Empirical Evidence from the World Trade Organization: NBER Working Papers 12727 National Bureau of Economic Research, Inc.

Baldwin, Richard, 1987. Politically realistic objective functions and trade policy PROFs and tariffs. Economics Letters 24 (3), 287–290.

Bardhan, Pranab, 2002. Decentralization of governance and development. Journal of Economic Perspectives 16 (4), 185–205.

Bergson, Abram, 1961. The Real National Income of Soviet Russia since 1928. Harvard University Press, Cambridge, MA.

Berkowitz, Daniel, DeJong, David, 1999. Russia's internal border. Regional Science and Urban Economics 29 (5), 633–649.

Blasi, Joseph R., Kroumova, Maya, Kruse, Douglas, 1997. Kremlin Capitalism: Privatizing The Russian Economy. ILR Press/Cornell University Press, Ithaca and London.

Bordignon, Massimo, Colombo, Luca, Galmarini, Umberto, 2008. Fiscal federalism and lobbying. Journal of Public Economics 92 (12), 2288–2301.

Boycko, Maxim, Shleifer, Andrei, Vishny, Robert, 1995. Privatizing Russia. MIT Press, Cambridge, MA.

Brown, J. David, Earle, John S., Telegdy, Álmos, 2006. The productivity effects of privatization: longitudinal estimates from Hungary, Romania, Russia, and Ukraine. Journal of Political Economy 114 (1), 61–99.

CCC, 2004. Obstacles to free trade in Canada: a study on internal trade barriers. Technical report Canadian Chamber of Commerce.

Endoh, Masahiro, 2005. Cross-border political donations and Pareto-efficient tariffs. Working Paper 915 Economic Growth Center, Yale University.

Enikolopov, Ruben, Zhuravskaya, Ekaterina, 2007. Decentralization and political institutions. Journal of Public Economics 91 (11-12), 2261–2290.

Fan, C. Simon, Lin, Chen, Treisman, Daniel, 2009. Political decentralization and corruption: evidence from around the world. Journal of Public Economics 93 (1–2), 14–34.

Federalists, 1787-1789. The Federalist: A Collection of Essays Written in Favor of the New Constitution. In: Rossiter, Clinton (Ed.), Reprinted in New York: New American Library, p. 1961.

Fernandez-Val, Ivan. 2007. Fixed effects estimation of structural parameters and marginal effects in panel Probit models. Boston University – Department of Economics – Working Papers Series WP2007-009 Boston University – Department of Economics. http://ideas.repec.org/p/bos/wpaper/wp2007-009.html.

Fisman, Raymond, Gatti, Roberta, 2002. Decentralization and corruption: evidence across countries. Journal of Public Economics 83, 325–345.

Gawande, Kishore, Bandyopadhyay, Usree, 2000. Is protection for sale? Evidence on the Grossman–Helpman theory of endogenous protection. The Review of Economics and Statistics 82 (1), 139–152.

Gawande, Kishore, Krishna, Pravin, Robbins, Michael J., 2006. Foreign lobbies and U.S. trade policy. The Review of Economics and Statistics 88 (3), 563–571.

Gennaioli, Nicola, Rainer, Ilia, 2007. The modern impact of precolonial centralization in Africa. Journal of Economic Growth 12 (3), 185–234.

Glaeser, Edward, Scheinkman, Jose, Shleifer, Andrei, 2003. The injustice of inequality. Journal of Monetary Economics 50 (1), 199–222.

Goldberg, Pinelopi K., Maggi, Giovanni, 1999. Protection for sale: an empirical investigation. American Economic Review 89 (5), 1135–1155.

Gregory, Paul R., Stuart, Robert C., 2001. Russian and Soviet Economic Performance and Structure, 7th edition. Addison-Wesley, Boston, MA.

Grossman, Gene M., Helpman, Elhanan, 1994. Protection for sale. American Economic Review 84 (4), 833–850.

Grossman, Gene M., Helpman, Elhanan, 2001. Special Interest Politics. MIT Press, Cambridge, MA.

Guriev, Sergei, Rachinsky, Andrei, 2005. The role of oligarchs in Russian capitalism. Journal of Economic Perspectives 19 (1), 131–150.

Hayek, Friedrich A., 1948. Individualism and Economic Order. The University of Chicago Press, Chicago, IL.

Hill, Fiona, Gaddy, Clifford, 2003. The Siberian Curse: How Communist Planners Left Russia Out in the Cold. Brookings Institution Press, Washington, D.C.

Hillman, Arye L., Ursprung, Heinrich W., 1993. Multinational firms, political competition, and international trade policy. International Economic Review 34 (2), 347–363.

Hollander, Stanley, Popper, Kathleen, 1994. Balkanization of America: lessons from interstate trade barrier experience. Journal of Macromarketing 64, 62–72.

Kee, Hiau Looi, Olarreaga, Marcelo, Silva, Peri, 2004. Market access for sale: Latin America's lobbying for U.S. tariff preferences. Policy Research Working Paper 3198 The World Bank.

Krugman, Paul, Obstfeld, Maurice, 1991. International Economics: Theory and Policy. Harper Collins, New York.

Linnemann, Hans, 1966. An Econometric Study of International Trade Flows. North Holland, Amsterdam.

Melder, Frederick E., 1937. State and local barriers to interstate commerce in the United States. University of Maine Bulletin, 40.Univ. of Maine stud., 2nd ser., no. 43.

Musgrave, Richard A., 1969. Theories of fiscal federalism. Public Finance/Finances Publiques 24 (4), 521–532.

Oates, Wallace E., 1972. Fiscal Federalism. Harcourt Brace Jovanovich, New York.

Olson, Mancur, 1982. The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities. Yale University Press, New Haven, CT.

Poncet, Sandra, 2004. A Fragmented China. Tinbergen Institute Discussion Papers 04-103/2 Tinbergen Institute. available at http://ideas.repec.org/p/dgr/uvatin/20040103.html.

Riker, William H., 1964. Federalism: Origins, Operation, Significance. Little, Brown and Co., Boston, MA.

Rotemberg, Julio J., 2003. Commercial policy with altruistic voters. Journal of Political Economy 111 (1), 174–201.

Shleifer, Andrei, Treisman, Daniel, 2000. Without a Map: Political Tactics and Economic Reform in Russia. MIT Press, Cambridge.

Shleifer, Andrei, Vishny, Robert W., 1994. Politicians and firms. Quarterly Journal of Economics 109 (4), 995–1025.

Slinko, Irina, Yakovlev, Evgeny, Zhuravskaya, Ekaterina, 2005. Laws for sale: evidence from Russian regions. American Law and Economics Review 7 (1), 284–318.

Sonin, Konstantin, 2003. Why the rich may favor poor protection of property rights. Journal of Comparative Economics 31 (4), 715–731.

Tiebout, Charles M., 1956. A pure theory of local expenditures. Journal of Political Economy 64 (5), 416–424.

Tommasi, Mariano, Saiegh, Sebastian, Sanguinetti, Pablo, 2001. Fiscal federalism in Argentina: policies, politics, and institutional reform. Economia 1 (2), 157–211.
Wiseman, Alan E., Ellig, Jerry, 2007. The politics of wine: trade barriers, interest groups, and the commerce clause. Journal of Politics 69 (3), 859–875.
Woodruff, David, 2000. Money Unmade: Barter and the Fate of Russian Capitalism. Cornell University Press, Ithaca.
Yakovlev, Evgeny, 2005. Political economy of regulation: case study of Russian regional alcohol markets. EERC Working paper.
Young, Alwyn, 2000. The Razor's Edge: distortions and incremental reform in the People's Republic of China. Quarterly Journal of Economics 115, 1091–1135.