Roving Bandits in Action: Outside Option and Governmental Predation in Autocracies

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The paper investigates the influence of outside options on the predatory behavior of autocrats. An outside option is referred to as the opportunity of an incumbent ruler to continue his career outside his current territory of control. The paper uses data on the effectiveness of tax collection and the repressiveness of tax jurisprudence for Russian regions in 2007-2009 and finds that regions ruled by governors with substantial outside options are characterized by more repressive behavior of tax authorities. However, surprisingly, the same tax authorities collect less additional revenues for the public budget. It conjectures that the presence of an outside option induces autocrats to behave like "roving bandits": they use tax audits to establish control over regional companies, but exploit this control to extract private rents rather than revenues for the regional budget used for public goods provision.

February 2012

Keywords: roving and stationary bandit, tax auditing, predatory government, Russian federalism

JEL: D72, D73, H77, P26

Preliminary version: please do not cite or quote without permission!

Acknowledgements: The authors appreciate the very helpful comments of the participants of the seminar on Russian law at the University of Helsinki. All mistakes remain our own.

1. Introduction

While in democracies elections and multiple veto players are supposed to be able to restrict governmental predation, in non-democratic states predatory behavior is more likely. However, autocrats are also rarely unconstrained in their predation: for instance, the need to invest in the measures ensuring their power (Wintrobe 1990); the danger of revolution (Acemoglu and Robinson 2006) and the concessions to the public (Gandhi and Przeworski 2006) also play an important role. Yet the most obvious factor constraining the predation by the autocrats is that predation is costly for the economic development in the long run: thus, a forward-looking dictator with no concerns for stability of his power should limit her rent-seeking, thus exchanging the 'larger share of a pie' for a 'smaller share of a larger pie' in terms of the absolute revenue received. This argument explains the difference in behavior between the 'stationary' and the 'roving' bandits, according to Olson (1993): a roving bandit, i.e. a predatory ruler or warlord without claim to a particular territory in a world of anarchy, will exhibit much higher rent-seeking than a stationary ruler, who has to make sure that he will be able to receive some income from his territory in the long run (see also McGuire and Olson 1996; Wilke, 2002, Overland et al. 2005, Chaturvedi and Muenster 2005, Shen 2007, Paltseva 2008, Azam et al. 2008, for development and the critical discussion of this idea).

The distinction between stationary and roving bandits has been empirically tested in the literature several times, producing an array of different findings. Specifically, the existing studies focus their attention on two main factors possibly constraining the farsightedness of the autocrat. The first one is age; assuming that the older autocrat does not expect to stay in power for a long time due to natural reasons, one could expect the aging dictator to behave more like a roving bandit. Jong-A-Pin and Mireau (2011) demonstrate the presence of strong adverse effects of age of the dictator on the economic performance. The second factor, which has so far received much greater attention in the literature, is the political stability. Once again, increasing the probability of power loss and hence turning possible 'stationary' bandit into a 'roving' one. The findings of this broad literature with respect to the impact of stability on growth are, however, inconclusive (see Goldsmith 1987; Clague et al. 1996; Alesina et al. 1996; Fosu 2002; Campos and Nugent 2002; Polishchuk and Syunyaev 2011, among others).

While the role of these factors in restricting the horizon of decision-making of autocrats is important, there is a further aspect of the 'roving bandit' story which deserves detailed consideration. If one looks at historical examples of societies where roving bandit behavior flourished, like medieval Vikings or nomads in Central Eurasia (see e.g. Kurrild-Klitgaard and Svendsen 2003), it seems to be possible to conclude that the predatory behavior was pri-

marily determined by the presence of an *outside option*, i.e. territories the bandit could loot after the rents from a particular country are extracted. From this point of view, roving bandits are primarily motivated by *low costs of mobility* and *large rents* present elsewhere, which can be extracted. The role of the outside options in the behavior of the modern autocrats has been, however, to our knowledge never investigated before. Clearly, it is partly due to the fact that most modern autocrats do *not* actually have an outside option: it is hardly imaginable that they receive a similar position with unconstrained power anywhere else than in the country they already rule,[1] unlike, for example, their counterparts in the medieval Europe, where kings and princes often changed the territories they actually controlled.

However, while for autocrats on the *national level* outside option is likely to be absent in the modern world, the situation is entirely different for the *sub-national* political regimes. In the recent years political science has devoted substantial attention to the analysis of sub-national autocracies, i.e. power systems established by regional governors both in conjuncture with the central authority, but also independently from it (see Gibson 2005; McMann 2006; Beer and Mitchell 2006; Gel'man 2008; Gervasoni 2010). If the regional autocracies are created by governors appointed by the central government and the chances for re-assignment to another position or region are relatively high and depend on political behavior of the regional autocrat rather than on his growth performance (i.e. different from, for example, the Chinese provincial political tournaments), then these regional governors should satisfy the same conditions 'roving bandits' of the past (Vikings or nomads) did: high mobility combined with significant outsider option. Thus, studying behavior of regional governors in this system could prove to be an additional test of the 'roving bandit' conjecture complementing the existing literature described above.

The objective of this paper is to examine the influence of the presence of outside option on the predatory behavior of regional autocrats studying the behavior of the Russian provincial governors in the late 2000s. Russia is an attractive empirical playground for this study for the following reasons. Since mid-2000s it is a highly centralized system, where regional governors are appointed by the federal administration. The patterns of appointment have been investigated by a number of papers (Zhuravskaya 2010; Reuter and Robertson 2011; Reisinger and Moraski 2011), which all seem to conclude that unlike China regional economic performance does not matter for the political career of the Russian governors – the central government is more likely to reward loyalty and to focus on political rationales than to take

[1] Clearly, there are outside options sometimes available in terms of retracting to private live or even democratization, yet these options are clearly different from that possibly causing roving bandit behavior – the chances of peaceful life after retirement depend upon the extent of predation of the autocrat

the economic outcomes of the work of the regional governor into account.[2] Thus, there also seems to be no incentive for the regional governor to restrict her redistributive appetites to increase the chances of re-appointment. However, since the early 1990s the Russian regions have been ruled by well-entrenched politicians, spending many years (and even decades) in their province. Hence, these regional autocrats could be expected to behave like stationary bandits. Whether it is the case, however, can be questioned: there is abundant evidence of rent-seeking and corruption in the regions ruled by powerful governors.

After president Vladimir Putin introduced the system of gubernatorial appointments (replacing the previously existing mechanism of regional elections), during the first years he had been rather cautious leaving most of the old governors in power. Over time, however, the central re-appointment strategies became more aggressive. In the late 2000s, a new breed of regional governors came into existence: unlike their predecessors, who spent most of their career in their region and rarely considered any further option of advancement beyond the position of the governor (unlike China, US or Germany, in Russia until recently there has been almost no evidence of regional governors successfully turning into federal politicians), the new appointees usually came from high-ranked positions in the federal ministries; for them position in the region was likely to be merely one additional step in their career advancement. Stating otherwise, while for the 'old' governors there was almost no outside option to their position (with very few exceptions), 'new' governors typically had an outside option. Thus, it is reasonable to assume that the new governors ought to be more likely to exhibit the behavior consistent with the roving bandit hypothesis.

Since the change from the 'old' to the 'new' generation of governors did not happen overnight, we consider a period when both old and new regional leaders co-existed in different parts of Russia. Thus, we investigate the period of 2007-2009. In particular, we look at the governors with *substantial federal connections* – i.e. those, who have experience of work in a federal institution or agency since 2000 (after Putin came to power) before the appointment as the regional governor – and study the extent of their predatory behavior compared to other governors. It is reasonable to conjecture that governors with federal connections have stronger outside option. Since the period of 2007-2009 is too short for the analysis of the growth implications of new appointments, we look at a more subtle aspect of the behavior of the regional governors – their influence on the tax collection in the regions under their control.

[2] Detailed descriptive evidence on the appointment practices under Putin and Medvedev is reported by Chebankova 2006; Goode 2007; Sharafutdinova 2010: Blakkisrud 2011).

While officially tax authorities in Russia are part of a federal ministry, unofficially there often exist strong ties between regional governors and federal bureaucrats working in their regions.

Specifically, we look at the *effectiveness*, *credibility* and "*profitability"* of tax audits, combining the data of the Russian official statistics and of the Federal Tax Service with a unique dataset on the performance of Russian courts. Our findings show not only that tax agencies that operate in jurisdiction of governors with federal connections *ceteris paribus* uncover more tax violations (*higher effectiveness*) than in other regions, but also that criminal prosecution for tax fraud was more repressive in the regions ruled by governors with federal connections (*higher credibility*). However, contrary to what one would expect, the same tax agencies collect less revenue per tax audit than their counterparts in jurisdictions which are headed by governors without federal connections (*lower "profitability"* in terms of additional public revenue). This paradoxical situation gives rise to the following interpretation: governors with close relationships to the political center (i.e. with substantial outside options) use the persecution of tax violations (which is easy in an environment of low tax compliance, like Russia) combined with credible repression as a tool to exercise control and demand loyalty from regional business groups. At the same time this control is not used to generate official revenue for the regional budget; governors are not interested in providing public goods and services (due to their short time horizon) and rather prefer using other instruments of rent-extraction ensuring that the rents are entirely captured by the bureaucrats themselves (e.g. corruption and side-payments). This is exactly the type of behavior one would expect from a 'roving bandit': increased rent-extraction combined with low provision of public goods.

This paper, therefore, contributes to several literatures. First, as mentioned, it provides further evidence regarding the presence of a 'roving bandit' behavior using a different tool of differentiating 'stationary' from 'roving' bandits. Second, it contributes to the discussion of the advantages and disadvantages of centralization in the studies of federalism and possible consequences of changing incentives for regional bureaucrats (Weingast 2009). The literature on fiscal federalism so far primarily concentrates on a handful of dimensions of decentralization, which do not necessarily reflect the extent of central and regional authorities in various policy areas (Libman 2010). Particularly, a rarely studied dimension of decentralization is associated with the analysis of extent of control of the central government over the regional bureaucrats it appoints (which, as it is shown by Myerson (2010), is likely to be imperfect), and the proximity of regional and federal bureaucrats (see Sheng (2007) for the analysis of this problem in Chinese context). This paper concentrates exactly on this dimension, examining its implications for the efficiency of the federal political institutions. Third, the paper con-

tributes to the discussion of the blackmail state pioneered by Darden (2001, 2008). The idea of the blackmail state implies that government issues laws and regulations which are contradictory and make tax compliance nearly impossible. From this point of view laws are primarily worked out for collecting rents and extracting fines. The government uses this knowledge, which is accumulated by a high level of surveillance, to blackmail and pressure local elites forcing them to support the governmental policy. In this context high levels of corruptions and bribes serve as an informal institution of governance and as a mechanism of state control.

This paper is organized as follows. In section 2 we provide a brief description of the Russian federalism, regional governors and tax investigations. Section 3 describes the methodology, data and key variables. The empirical results and the main robustness checks are presented in sections 4 and 5 respectively. The last section concludes.

2. Russian federalism, regional governors, and tax investigations

2.1. The genesis of centralization

Although the Russian Federation inherited a centralized system of intergovernmental relations from the Soviet period, under its first President Boris Yeltsin (1991-1999) it experienced strong decentralization of political and fiscal authority to the regions. His administration relied on a system of fiscal transfers and delegated political autonomy to the regions in order to ensure support for national economic reforms and to counteract the threat of regional disintegration.[3] At the same time regional governments seized the favorable opportunity and used their bargaining power to negotiate power sharing treaties with the federal center (Söderlund 2006) and implement laws and regulations that contradicted federal law (Polishchuk 1998). As a result, at the sub-national level vivid political life emerged: in some regions incumbents were able to seize control over the politics and create long-lasting regimes almost independent from the federal government;[4] in other regions multiple players competed for influence either through formal channels (competitive regional elections, which were introduced in all Russian regions in 1996 and existed in a number of regions already since 1991) or informally through the elite bargaining.

The inauguration of Vladimir Putin (2000-2008) as the new president of Russia marked a turning point in the development of Russia's political system. The new president embarked on an ambitious mission to reverse decentralization and to restructure the Russian

[3] For details see Shleifer and Treisman (2000).

[4] Prominent governors with long regional tenures were the former mayor of Moscow Yury Luzkov (1992-2010), and the governors of Bashkortostan Murtaza Rakhimov (1993-2010), Tatarstan Mintimer Shaimiev (1991-2010), and Rostov Vladimir Chub (1991-2010).

Federalism into a highly centralized political system (which has been coined the "vertical of power"). His intention was heralded by various reforms aiming to strengthen federal control mechanisms and to restrict political and fiscal autonomy of the regions (Mitin 2008). The reforms had particularly drastic consequences for regional governors. They were not only deprived from their *ex officio* right to sit in the Federation Council[5], but were also put (at least officially) under the supervision of plenipotentiary representatives of the president. In the area of fiscal federalisms reforms had similar magnitude.[6] Among others, the federal center introduced an equalization transfer formula to put an end to bilateral transfer negotiations and limited regional revenue autonomy by increasing the share of federal taxes in the regional budget.

The reforms reached their climax in December 2004 when President Putin announced to further consolidate the central governments power by replacing the direct regional elections of governors by federal appointments. To be precise, the new appointment routine determined that the President has to recommend a potential candidate, which has to be accepted by the regional legislative assembly. In the unlikely event (has not happened yet) of a triple rejection the president has the right to dissolve the regional parliament and announce new elections. Moreover, the president can dismiss governors due to a "loss of presidential confidence" in the governor's ability to fulfill his job (this tool, however, was used only three times in 2005-2011). As mentioned, in the first years after the introduction of gubernatorial appointments the federal government refrained from replacing powerful regional leaders. The reasons are heterogeneous. First, the authority of the federal center was not omnipotent. In some regions the federal government had to consider the interests of powerful elites or ethnic minorities. Second, many governors saw "the writing on the wall" and joined the party of power *Edinaya Rossiya* (United Russia) in order to signal loyalty and to "apply" for a next term in office. Despite the various acts of courting many powerful regional governors became gradually replaced.

2.2. The advance of new type of governor

However, in the longer run the introduction of gubernatorial appointments not only created a political system in which elected and appointed regional bureaucrats co-existed (at

[5] Russia's legislative body, the Federal Assembly, is subdivided into the Federal Council (higher house) and the State Duma (parliament; lower house). The members of the State Duma are elected. Until 2000 the senators of the Federation Council were made up of two *ex officio* representatives from each region: the heads of the regional executive and legislative branches (governor and president of the regional parliament respectively). The reforms allowed senators to hold only one political office and determined that one senator has to be elected by the regional parliament, while the second has to be nominated by the governor, however needs to be confirmed the legislative body of the region.

[6] For a detailed account on the intergovernmental reforms of Russian fiscal federalism see de Silva et al (2009).

least for a certain time), but also "opened the gates" for new politicians with certain characteristics who previously had been excluded from the regional political arena: politicians *with* federal connections and politicians *without* local origin. In what follows we will briefly sketch both characteristics.

The presence of some sort of support from the federal government is almost an unavoidable requirement for being appointed a governor in the Russian system: the candidate should be known to the federal administration (probably, primarily to the Administration of the President, including the staff directly supporting the decisions of the president of Russia and also preparing the appointments) in order to be considered for office in the first place. This is of course very different from the times of the elected governors; that period actually featured a number of cases when candidate supported by the federal center lost to the alternative contestants, sometimes even with extremely bad standing in the eyes of the federal government (to provide an extreme example, the former vice president of Russia, Alexander Ruzkoi, a direct political enemy of Yeltsin and one of the leaders of the parliamentary opposition suppressed by force in 1993, was elected the governor of the Kursk region in 1996). However, as mentioned, even after the introduction of the appointment system the logic for appointments still varied: sometimes the political connections on the central level played the crucial role, and sometimes the specifics of the regional politics and elites had a greater influence on the decisions.

Probably, the most obvious way to find out the cases when the governors had obvious political connections at the federal level is to trace their former career paths. Specifically, it is reasonable to assume that 'federal connections' have been characteristic for the governors, who have (before their appointments) worked at the federal institutions. A governor of this group is more likely to regard his appointment in the region as "temporary commitment" and "professional test" for his future political career. Moreover, he is aware that he will stay for a maximum of two office periods and expects to return to a (prestigious) position in a federal institution afterwards.[7] It is also more reasonable to expect that these governors have higher chances to continue their career elsewhere after the end of their tenure in the region (what would indicate the presence of a large outside option). On the opposite, governors without federal ties do not anticipate to be rewarded with a federal position and therefore will try to extend their tenure period as much as possible. Thus, in this paper we (somewhat restrictively) define 'federal connections' as previous experience of work in federal institutions (un-

[7] In contrast to the past practice President Medvedev emphasized that he wants governors to stay in office for a maximum of 2-3 periods of 4-5 years (for example see http://english.ruvr.ru/2010/11/11/33230247.html). This rule, however, has not been rigorously enforced in the past

der the administration of Putin and Medvedev, i.e. after 2000; work under Yeltsin does not necessarily translate into the support of the new political leadership of Russia as well; for Putin and Medvedev, however, the continuity of elites was almost complete). At this stage we want to give two examples for governors with federal connections. The current governor of the Altai Krai region, Alexander Karlin worked from 2000-2004 in the Ministry of Justice (from 2002 as first deputy minister) and from 2004-2005 in the Administration of the President, before being appointed governor in 2005. In a similar fashion, Alexander Kozlov, the current governor of Oryol region, served as deputy head of the Administration of the President in 1999-2004 followed by a term as deputy minister of agriculture (2004-2009), before eventually being appointed governor in 2009. From this point of view, in the late 2000s the federal center increasingly appointed bureaucrats with federal connections to regional governors. While in 2007 only 6 governors had close ties to federal institutions, by 2009 already 13 regions were headed by politicians with connections to Moscow.[8] Nevertheless, not all newly appointed governors have close federal connections. In some regions, especially in the Volga regions of Russia and in the Northern Caucasus, other individual characteristics, such as ethnic origin, are more decisive factors in the federal appointment decision.

For our analysis, it is also important to point out that different expectation about the tenure duration and future career prospects will also influence the way how governors interact with regional firms. Governors without federal ties are more dependent on the loyalty and support of regional firms and therefore will be more inclined to provide administrational and financial support to regional enterprises in return for social development and new jobs; in this case one can expect informal coalitions of governors and regional firms to form (Yakovlev 2011). On the other side, governors who expect to leave the region after one or two periods, knowing that they will not be evaluated according to the economic performance of their region (as we have shown it before) might reveal a less cooperative attitude towards regional firms. These governors may prefer immediate "success stories" in sensitive fields of public policy, instead of long-term economic policy implementation. Potential "success stories" could be the reduction of corruption, tax evasion, and bureaucracy. In a "blackmail state", as depicted above, regional governors can use their knowledge about low tax compliance and deliberately uncover tax violations in order to improve tax fraud statistics. Because the per-

[8] In 2010 this trend continued with already 17 regions governed by bureaucrats with federal relationships.

formance of tax agencies is in the focus we elaborate a bit more tax compliance, tax investigations and the characteristics of the blackmail state in Russia.[9]

A second phenomenon frequently observed in connection with gubernatorial appointments is the nomination of bureaucrats without local origin (in the Russian political slang politicians without ties to the regions they govern are called "Varyag"[10]). The federal administration can deliberately appoint outsiders with little regional ties as governors to break the close relationships between the regional government and the regional elites which have been made responsible for the high level of regional "state capture" in Russia (Slinko et al. 2005). Once again, the number of these governors has increased over time as part of the process of centralization (the economic consequences of appointing governors without local origin have been examined by Schultz and Libman 2011). Nevertheless, the set of Varyags and governors with federal connections does not necessarily coincide. For example, the federal government could increase the number of Vargyags by appointing lower-ranked regional politicians and bureaucrats as governors to other regions;[11] on the contrary, while selecting a possible appointee to the region from the set of those with federal connections the federal government could possibly prefer a person coming from this region and thus having a better understanding of the regional specifics. There are good reasons to believe that the performance of the governors with and without local origin (and therefore the knowledge of local specifics) should differ, thus this characteristics should definitively be taken into account.

Nevertheless, while for the governors with federal connections we can reasonably expect the presence of the outside option, it is much less clear for the Varyags. On the one hand, Varyags have personal experience of working in several regions, to if they extrapolate this experience on their future career, one could believe they expect the outside option to be available for them. On the other hand, unlike governors with federal connections, Varyags often

[9] Of course, federal connections as defined here and observed in the biographies of the Russian governors are not the only type of possible links they could have to the federal administration. Possibly, the links are of personal nature, i.e. friendship with some key federal officials or the president. Unfortunately, this type of linkages is not observable. We have attempted to use an alternative variable, creating a dummy for governors, who have worked in St. Petersburg during the period Vladimir Putin worked there (the claim that Putin was relatively more likely to appoint people he had connections to before the start of his political career at the federal level – in St. Petersburg Putin worked as a vice rector of the university and in the city administration. However, in our sample we find only 4 observations of this type; three of them belong to the governor of St. Petersburg Valentina Matvienko. Thus, on the one hand, these observations do not drive our results as described below and, on the other hand, are insufficient for proper statistical analysis.

[10] The word "Varyag" can be translated with "Viking" and is an old Russian metaphor for someone who is invited from a distant region to rule, which can be probably traced back to the old founding myth of the Russian principalities, tsars and emperors, which attributes the establishment of the Russian statehood to the Scandinavian rulers invited by local population to ensure order.

[11] For example, it has been done with several key members of the staff of the mayor of Moscow in the second half of the 2000s, supposedly to weaken the power potential of the latter.

have limited access to the federal administration, which ultimately decides over appointments. While they have been (for some reasons) chosen once, there is no guarantee they will ever be chosen again for the governor's office. One should point out though that with one exception there have been no cases in Russia when the same individual served as governor in more than one region during his career, so the 'rotation of the governors' in the strict sense does not exist – Varyags come from lower ranks of regional administrations. For a typical regional bureaucrat in Russia the position of a governor constitutes the highest point of one's career. Some of the Varyags, however, come from the private industry; for the latter outside option is obviously available. Thus, the cautious solution used in this paper is to test for both 'Varyag effect' and 'federal connections' effect on the extent of predation in the region. We will show, however, that while 'federal connections' have a robust effect observed in all regressions, thus, we focus our attention on this group in particular.

2.3. Tax evasion, the blackmail state, and tax investigations

As mentioned, we attempt to understand the extent of predatory behavior of the Russian regional governors, we are looking at the tax administration in Russian regions. The choice of this variable is reasonable due to three considerations. First, tax evasion in Russia is very widespread, as it is, in fact, in many post-Communist countries (Uslaner 2007; Hug and Sporri 2011). Throughout the 2000s Russian government put substantial effort in combating tax evasion, including tax reforms (Joes Luong and Weinthal 2004; Ivanova *et al.* 2005; Gorodnichenko *et al.* 2009), improvements in tax administration and monitoring and even nationalization (Chernykh 2011). Second, as mentioned, although tax collection in Russia is a federal affair, regional administrations do play an important role in this process, either directly influencing tax collecting agencies or indirectly providing support to their actions (or withdrawing it) from the regional bureaucrats. In the first half of the 2000s Putin invested substantial effort in cutting these ties; however, while the connections between the old regional governors and the federal bureaucrats were severed, the newly appointed governors (themselves originally bureaucrats in federal agencies) are more likely to develop ties to the federal agencies in their region anew. In the same way, regional governments usually have a strong influence on the decisions of courts.[12] Third, the behavior of tax authorities in Russia is in many

[12] This influence could in fact be associated with the links between Russian governors and the prosecutors representing the government in courts. Russian criminal courts are known to follow the suggestions made by prosecutors almost to the letter, what manifests itself in a very low share of acquittals. Nevertheless, the decisions regarding conditional release and imprisonment, which we investigate in this paper, are among very few cases of judicial discretion. For the purpose of this paper, it is sufficient to conclude that governors control courts, regardless of the channels used for this control.

cases strategic (Libman and Feld 2011), i.e. the choice of effort in the monitoring and collecting taxes in Russia is highly selective.

To give an idea how tax agencies work we briefly sketch the stages of a tax investigations. In principle, tax agencies can conduct either desk or field investigations to uncover tax fraud and to ensure tax repayment. While the number of field audits have decreased over the past years, the amount of tax repayments per field audit increased by 23 times in 2000-2009 (from 188 thousand to 4200 thousand Rubles). Before tax investigators visit a company they will have checked its books and identified "suspicious" behavior. If tax inspectors return with insufficient tax-repayments they will be disciplined (see Vedomosti, 2011, 18 May); informally there are standards of how much tax fraud should be uncovered. Therefore many tax audits have *ex ante* financial goals and operate according to the principle "once we do a field audit, we will not return with empty pockets". Once tax violations have been uncovered, the behavior of the tax agency differs depending on whether legal entities or individuals have been investigated. For individuals, the tax agency has to file a claim with the court, which then issues a warrant providing the agency with the right to collect the tax debt. For companies taxes are collected without the decision of the court (with several exceptions); but if the company files a complaint (what is very often done), the court still has to decide upon the validity of the claim of the tax agency. If the claim is accepted as legitimate, tax agency has the right to impose fines on the taxpayer.

If the tax claim exceeds certain amount (1.5 mln. Rubles or between 0.5 and 1.5 mln. Rubles if this sum exceeds 10% of the taxes to be paid within a three year period), the tax authority is also empowered to initiate the criminal prosecution against the taxpayer (individual) or CEO (legal entity).[13] The sanctions range from fines to arrest and imprisonment. First of all and depending on the size of the tax fraud the agency can charge fines from 100 up to 500 thousand Rubles.[14] The prison sentence, depending upon the size of the tax arrears uncovered, may reach up to six years.[15] However, in the last case Russian courts actually have certain discretion in the way the sentence is served. They may decide either on actual imprisonment, or on the conditional release of the accused. In the case of a conditional release the convicted prison sentence is suspended on condition of probation. In other words, during the

[13] For more details on penalties for tax evasion see Russian Criminal Code Article 198 (for individuals) and Article 199 (for organizations). For more details on penalties for illegal entrepreneurship see Russian Criminal Code Article 171.

[14] For general tax evasion penalties of 100-300 thousand Rubles are allowed. In cases of large scale tax evasion the penalties are set from 200-500 thousand Rubles.

[15] More specifically, the Russian Criminal Code allows for up to 3 years of prison sentence for „normal" individuals and up to 6 years individuals in responsible positions in companies.

period of conditional release the behavior of the convicted is monitored and in the case of further law violations the convicted will be imprisoned. Given the adverse conditions in the Russian prisons and massive violations of human rights in the penal system (see also Bobrik et al 2005), the conditional release is even more valuable in Russia than elsewhere in the world. The decision of the court in this matter is expected to take the personality of the accused into account (e.g. characteristics from previous employers, family status and children, health status, behavior before and after the crime was committed), as well as the threat the accused constitutes for the society. Overall, it is safe to say that the discretion of the courts in this area is very large and, given political influence of the executive on the courts, is likely to be abused.

As it has been mentioned already, the actual effort of tax agencies spent to investigate various tax crimes is very often strategically chosen. While in the 1990s high level of tax evasion have been regarded as the result of a weak central state, during the 2000s the proliferation of tax fraud is ironically interpreted as the consequence of a particularly strong central state. The political leadership came to the conclusion to resign from the "hopeless battle against tax fraud" and rather use its knowledge about low tax compliance to demand political loyalty from business groups in return for "closing the eyes" on tax violations. Central and regional government can enforce such an informal contract by threatening with rigorous investigations by tax agencies. Russian tax agencies are well known for their predatory and rent maximizing behavior. They are willing to manipulate legal proceedings in order to charge firms with unjustified tax claims and are exploited to fight political opposition. The history of government-business relations in Russia is full with examples when tax claims have been used as a tool of political pressure, with the CEO of *Yukos,* Mikhail Khodorkovsky, being probably the most prominent and well-known. However, regional governors often use similar tools establish their regime and to blackmail the companies. Hence, the detailed observation of the tax collection in Russian region could possibly reveal evidence of predatory behavior of the government (which otherwise is extremely difficult to document) – and we will use these data in what follows.

3. Data and econometric strategy

In a nutshell, the paper regresses the characteristics of regional tax audits (measuring the *effectiveness*, *credibility* and "*profitability"*, i.e. the tax revenue actually received by the budget) on a set of governor-specific and region-specific variables. We use an unbalanced panel of roughly 66 Russian regions observed throughout three fiscal years (2007, 2008, and

2009).[16] We have to exclude a number of regions for the following three reasons. First, we follow the standard procedure in empirical studies on Russian regions and exclude Chechnya and the so-called "autonomous okrugs" for which no consistent and reliable data exists.[17]. Second, we exclude 10 regions for which data on tax investigations was not available: Altai, Ingushetia, Kaliningrad, Kaluga, Region of Moscow, North Ossetia-Alania, Novgorod, Smolensk, Tatarstan, and Udmurtia. From a spatial, political, and economic perspective there seems no systematic pattern in this set of regions. Thus it includes rich and poor, ethnically Russian and non-Russian, industrial and agricultural regions. Finally, we exclude Moscow City, which we have identified as clear outlier. The reason is that almost all large Russian companies are registered in the Russian capital.[18] Therefore, on the one hand, data for Moscow City is systematically 'contaminated' by containing transactions, which have actually happened in other regions (hence, courts in Moscow have to deal with affairs of companies actually operating in other regions etc.). On the other hand, the largest Russian companies are partly monitored by a special extra-territorial division of the Russian tax authority and not included in statistics of the regional offices. Thus, we cannot clearly interpret the information obtained for this region. In order to capture the time and region-specific unobserved heterogeneity, all regressions are estimated using two-way fixed effects. Thus, we control for specifics of individual regions and idiosyncratic shocks, e.g. through changes of the federal policy (affecting all regions).

Our key explanatory variable is a dummy for governors with federal connections which is equal to one for all governors who have worked in a federal institution before their inauguration and zero if otherwise. We only consider federal employments after Putin was elected Russian president in 2000 to capture existing close relationships to the Putin-Medvedev administrations. Among the positions which give rise to federal connections we count high positions in the presidential administration (e.g. head of administration, adviser), in ministries (e.g. minister, vice-minister), or in offices of the plenipotentiary envoys of the president (e.g. head of a federal district, regional representatives). Detailed information on the

[16] The Russian fiscal year coincides with the calendar year. For 2007, 2008, and 2009 we have data on 67, 64, and 67 regions respectively.

[17] "Autonomous okrugs" are subgroups of Russian regions which are simultaneously part of the federation and of other regions. In 2009 there had been three autonomous okrugs: Yamalo-Nenets, Khanty-Mansiysk (both belong to Tuimen region) and Nenets (Arkhangelsk). The data for autonomous okrugs are often not reported separately but always included in the variables calculated for higher-level jurisdictions, what constitutes a further problem of 'double counting' if one includes autonomous okrugs in the regressions. Furthermore, it is difficult to disentangle the exact extent of their autonomy in relations to the higher-level regions.

[18] With the only exception of *Gazprom* located in St. Petersburg, which we will control for in what follows. One has to point out that the number of tax investigations, criminal prosecutions and additional budget revenue from taxation in the City of Moscow is by an order of magnitude larger than elsewhere in Russia.

career paths of incumbent governors is publicly available on the respective websites of the regional administrations. In addition, several governors use private websites and blogs which contain detailed biographies.[19]

Both the within-variation and between-variation of this variable is large (standard deviation of 0.163 and 0.238 respectively), and therefore one can apply the two-way fixed-effects without facing the problem of almost time-invariant variables in panel data settings. In the allocation of governors to the yearly tax audit data we faced the problem that in some regions governors were replaced during the year. In such cases we allocate the respective year to the governor with the longest duration in office in the respective year (more than 6 months). Thus if the replacement happened in June, we will allocate the year to the newly appointed governor since he ruled for more than six months.[20] This allocation methodology is reasonable since the number of tax audits is relatively equally distributed throughout each year.[21]

Using official statistics of the tax service we derive three result-oriented measures to describe tax auditing in Russia. In order to capture the success rate of tax audits (*effectiveness*) we use the share of tax investigations which have uncovered law violations in the total number of tax investigations. Clearly, the number of violations uncovered depends not only on the effort of the tax administration, but also on the extent of tax evasion. However, given the widespread tax evasion in Russia, it is reasonable to argue that a large part of the actual violations remains uncovered and hence the variation is more likely to be caused by the activity of the tax authority. The second dependent variable illustrates the willingness of the tax agencies to implement the maximum penalty (*credibility*). Once being convicted the tax evader can either be sentenced to prison or can "get away" with a conditional release. Therefore we measure the share of prison penalties in the total number of prison penalties and conditional releases. In some sense, the variable measures the extent of 'repressiveness' of the tax law implementation in the Russian regions.[22] The third dependent variable measures the main

[19] The biographies of Russian governors can be accessed through various internet sources. For our purposes the Russian version of Wikipedia (http://ru.wikipedia.org) has turned out to be a reliable source of information. In comparison to other websites, Wikipedia provides concentrated, well-structured and in most cases complete record on the biographies of all Russian governors. Whenever information was missing, or data had to be validated we access the official biographies on the websites of the regional administrations.

[20] Gubernatorial appointments in the middle of the year are the exception. In fact, most commonly governors are replaced at the end (December) or in the beginning (January) of a year.

[21] Consider the example of the Mordovia region. According to the tax agency statistics there were 172 tax audits in the first half of 2009, while in the second half of the same year 161 audits were recorded.

[22] A possible criticism against our approach is that this variable could reflect the outcomes of a long-term judicial process rather than the decisions of the current governors. However, given the Russian practices, it is also reasonable to expect that courts change their attitude to the already running legal procedures if the political situation changes; these adjustments could happen rather fast.

purposes of tax audits, namely the monetary value tax repayments (one could call it "*profitability*", recognizing though that the term is not entirely accurate). Thus if an investigation was successful in uncovering a tax fraud the convicted party has to pay fines and repay the evaded taxes. We will measure the "profitability" of tax investigations by calculating the additional revenues for the federal budget per successful tax audit.

Apart from the federal connection dummy we use the following sets of control variables encompassing region-specific and tax investigation-related variables. First, we control for regional characteristics including regional income per capita, population and urbanization. The heterogeneity of the Russian regions could have an influence on the frequency, thoroughness, and motivation of tax investigations. Thus more populous and prosperous regions are more likely to have large and successful enterprises which could "attract the eyes" of tax agencies. In a similar fashion a high urbanization rate can refer to a larger shadow economy which could influence the proliferation tax violations and therefore the rate of uncovered tax crimes. Second, we control for explanatory variables which are related to tax investigations. Specifically, the total number of tax investigations and the share of tax investigations involving police in the total number of tax investigations. The former variable is a proxy for the total effort tax agencies undertake to uncover tax frauds. The latter measures the participation of (often heavily armed) police forces in the total number of field audits. The participation can be requested by tax agencies and is not only an effective tool for attracting public attention, but can also serve as a credible signal to tax evaders. In a third group of variables we control for two determinants of the Russian fiscal federalism: fiscal transfers and the retention rate. Fiscal transfers are financial flows from the federal center to the regions which are determined according to the deficit (surplus) of the regional budget. Under certain circumstances regional governments can have an interest in reducing tax collection efforts in order to maximize the amount of equalization transfers from the center. The retention rate describes the share of collected taxes which are the regions disposal and do not have to be remitted to the central government.[23] Thus the retention rate can influence the regional government's decision to enforce tax laws. Fourth, we control for various measures of repressiveness of jurisprudence in the region in general and of the tax law in particular. We include the number of convictions for tax crimes, the number of overall convictions, as well as the overall repressiveness of the criminal law. The latter two variables measure the convictions and imprisonment in all areas of the criminal law including crimes against individuals, crimes in economic areas (includes

[23] Notice that in the Russian case retention rate is in some rare circumstances larger than 1. Usually it is associated with the VAT repayment transactions between different levels of the fiscal system.

tax evasion), crimes against the social order, crimes against the state, and crimes against life and health. Some of the variables mentioned may be endogenous, so we add them to the regressions one-by-one investigating the influence on the estimations.

In addition, we control for several governor-specific characteristics. First of all, we have to control for the local origin of the regional governors. For this purpose we have scrutinized their biographies and determined the relative time a governor has spend in his region of office before inauguration. Specifically we have determined the regions in which the governors were born, raised, educated, and worked before assuming office. The result is a dummy which equals one if the governor has spend at least a couple of years of his life in his region of office, while it is zero if the governors came only recently before his appointment to the region. The former we refer to as "insiders", whereas the latter can be considered as "outsiders".

For illustrative reasons we will give two examples. The current governor of Archangelsk region Ilya Mikhalchuk, graduated in Magadan region (Far East) and spends his professional career in Sakha region (Far East) while he moved to Archangelsk region (North West) only shortly before his appointment in 2008. We consider him to be an outsider to his region which is reflected in the local origin 1. On the opposite, Vladimir Torlopov, the past governor of Komi region (2002-2010) was born, studied and worked in Komi region before becoming governor in 2002. The variable is significantly correlated with the federal connections dummy: the Spearman correlation coefficient is -0.125 significant at 10%, the t-test on the means of federal connections for groups with and without local origin reveals that in the second group the average level of federal connections is significantly smaller (0.073 versus 0.159, p-value 0.0414). Hence, inclusion of both variables could potentially cause the multicollinearity problem; the correlation is not perfect, however. In what follows we will investigate which effect does the inclusion of the local origin variable has on our results.

Second, we check for two further variables, which could affect the availability of exit options and thus the "roving" versus "stationary" bandit behavior. One is the age of the governors: the Russian governors during the period of our investigation varied a lot from this point of view (our sample includes governors in mid-thirties and in early seventies), and it could have a substantial impact on the extent of their rent-seeking behavior and be correlated with the federal connections (if one assumes that the new appointees under Medvedev have been usually somewhat younger than their predecessors).

In addition, "exit" into another high-ranked position in the public service is not necessarily the only option for Russian governors. Another option could be "exit" into business

activity. Here, however, several cases should be differentiated. Some of the governors acquire assets and control over business during their tenure (actually, probably, most of the Russian governors behave that way). In this case "exit" can also be associated with loss of control over the assets, which are typically expropriated by the new generation of politicians or simply lose competitiveness without strong support of the governors. Another opportunity is associated with the advancement of the governors, who have been successful businessmen before their appointment. As Gehlbach et al. (2010) demonstrate, there have been multiple cases when Russian businessmen attempted to acquire position of the governors during the period of free elections before 2004. After 2004 businessmen were also occasionally appointed as regional governors. In this case the behavior of the governor, on the one hand, could also follow the "roving bandit" logic – as federal officials, businessmen can usually return to their companies after the end of their tenure as governors.[24] On the other hand, one could question insofar rent-seeking is indeed relevant for wealthy businessmen, who usually have access to other sources of income. There may in fact be other factors supporting the political activity of businessmen: if the credibility of commitments from the politicians is low, businessmen could attempt to acquire positions as governors to protect their property and business interests from expropriation. Anyway, it is important to check for the influence of this factor: hence, we have created a dummy equal to 1 for all governors, who have been either owners of large companies (e.g. Abramovich, Kanokov) top managers (e.g. Khloponin, Artyakov), or extremely wealthy bureaucrats (e.g. Ilyumzhinov, Darkin) prior to their appointment as governors. Since the Russian business often lacks transparency in terms of property structure, we cannot be sure that the information we acquired is complete, but it should at least allow us to identify the governors with really significant business history in the past – i.e. those who are more likely to consider business as a reasonable exit option.

Probably the most famous example of a businessman who became governor is Roman Abramovich the governor of the distant Chukotka region. Abramovich governed Chukotka for two legislative periods (2000-2008) of which the last two years fall within our sample.[25] In 2007 and 2008 he was ranked among one of the three richest Russians (with an estimated fortune of 19 billion dollars for 2007, see forbes.ru). Before he came to Chukotka he already controlled one of the largest Russian oil companies. Moreover, during his tenure he did not

[24] While the Russian law requires the governors to abstain from direct management of their companies, of course, they can still keep shares in companies, and, more importantly, almost always maintain informal connections to their formal businesses, so that they can easily "go back" after their position as governors is terminated.
[25] Abramovich was elected governor in 2000, reappointed in 2005 by president Putin and voluntarily resigned in 2008. Since he was replaced by Roman Kopin in the end of July we allocate the year 2008 to tenure of Abramovich.

restrain from business activities and performed a number of large scale corporate establishments and acquisitions leaving no doubt that he has planned to return to business after his tenure (allegedly he wanted to resign after his first term, however Putin insisted on a second term of Abramovich of governor of Chukotka).

To avoid the impact of outliers, we used logarithmic transformation of several variables (urban population, population, income per capita, total number of tax investigations, and additional income per tax audit). Detailed description of the variables is provided in *Appendix A*.

4. Results

The effectiveness of tax investigations: We now turn to our results. In *Table 1* we have estimated the impact of federal connections on the effectiveness of tax investigations in terms of uncovered violations of the tax law. In regression (1) we look at the success rate controlling only for federal connections and regional characteristics including income per capita, population and urbanization. Despite the potential influences of regional specifics most of the variables turn out to be insignificant (the only exception is log population, which seems to reduce the success rate of the tax authorities – probably because more populated areas are also more advanced in terms of legal culture and knowledge of tax law, which makes the arbitrary behavior of tax authorities more difficult and the practices of tax evasion more sophisticated; one would expect this effect to increase with urbanization, what is, however, not the case). However, the federal connection dummy has a positive and significant impact on the rate of successful tax audits. We interpret it in the way that regions governed by bureaucrats with a past record in federal institutions report significantly more successful tax audits than regions where close ties to the central administrations are absent. The effect may be caused by higher effort of tax administrators 'allied' with the governors of the new generation, but also by the better coordination of regional and federal enforcement agencies.

Regression (2) controls for the total number of tax investigations which have no effect on the success rate. In addition, regression (3) includes the share of tax investigations involving police forces. The variable shows a positive and significant influence on the effectiveness of tax audits. At this stage the question of causality remains open: is police support requested in particular clear cases of tax fraud, or does the participation of the police make it necessary to create a "success story" in order to justify the operation? In regression (4), (5), (6) and (7) we add further variables federal transfers, retention rate, local origin and age of the governor respectively without any significant effect. In regression (8) we control for the repressiveness

in all areas of criminal law which also has no effect on the success rate of tax investigations. Nevertheless, the effect of federal connections remains significant and positive throughout the sample. Regression (9) also adds the "business exit dummy" to the set of covariates: our results remain robust, and we find no significant difference of the business exit option on the rate of success of local tax authorities.

The credibility of tax investigations: *Table 2* estimates the credibility with which tax investigations are conducted by looking at the effect of the federal connection dummy on the share prison penalties in the total number of prison penalties and conditional releases. Regression (10) confirms our previous findings that governors with federal connection not only report higher success rates of tax violation, but also "suit the action to the word" by putting more convicted tax evaders in prison. The result is robust throughout *Table 2* remaining marginally significant and positive (in this case we control not merely for the overall repressiveness of regional courts, but also for the number of convictions in all areas of criminal justice and in the tax matters individually, which could affect the sentence passed by the judge; we include these variables one by one as they are closely linked to each other). Regional characteristics have no effect on the results, with the exception of urbanization, which is associated with higher repressiveness of the regional courts. In terms of other robust findings, we show that once police forces are involved in tax investigation more convicted receive a prison sentence (what is not really surprising). Interestingly, however, we find that governors with a "business exit" option are *less* repressive in the matters of tax policy. While it is more difficult to assess this result from the rent-seeking perspective, it seems to be quite reasonable if one assumes that the businessmen's accession to power is primarily to protect their assets; our results suggest that they do it by making tax law application generally less repressive. Furthermore, in order to prevent bias results we re-estimated regressions of *Table 2* excluding the respective regions. The results are presented in *Table 3* and confirm all the findings discussed above.

The "profitability" of tax investigations: In *Table 4* we investigate into the effect of federal connections on the money collected for the budget per tax audit. We find several interesting effects. First, the federal connection dummy is negative. That means that although regions governed by bureaucrats with federal ties are more repressive in uncovering tax crimes and "putting convicted behind bars" they neglect tax collection, the fundamental reason for tax investigations. Second, local origin is negative and marginally significant in some of the specifications indicating that governors who originate from the region collect less revenues than governors coming from a different regions (the effect of federal connection is quan-

titatively stronger though). As for the last effect, a reasonable explanation for this result might be that entrenched governors have strong relationships with regional business groups and therefore try to minimize their respective tax burden (in line with the unofficial coalitions between businesses and governments literature). Nevertheless, while the results for local origin are unexpected, they are at least not paradoxical: this variable had no effect on the effectiveness and credibility of audit, so one could assume that in this case tax authorities behave in an 'average' way in Russia, but show lower success in the final stage ultimately resulting in lower additional budget revenue. For the federal connections dummy the results, however, seem to be contradictory: the tax authorities have been shown to operate more efficiently in the regions ruled by governors with federal connections, yet ultimately they collect less money for the budget (or, at least, have no effect on the revenue – what would also mean that, taking region-specific characteristics into account, their effort in vain). The result, nevertheless, can be easily interpreted through the lens of the strategic behavior of the tax authorities in the Russian region.

If one expects the pressure of the tax authorities to serve as a tool of control over companies, higher repressions and success rate indicate that tax authorities manage establishing control much better in the regions ruled by governors with federal connections. However, the control can be used for various objectives. It can either be directed towards receiving larger budget revenue, or serve as a tool to extract rents from which the regional bureaucrats benefit directly. A typical example is an extra-budgetary fund established by the regional bureaucrat for supposedly charity purposes or as a support to the regional budget. These organizations exist in many Russian regions. While officially contributions to these funds are entirely voluntarily, it is well known that companies refusing to contribute to this 'charity' encounter serious problems with the regional authorities. However, the extra-budgetary funds provide a much larger opportunity for personal enrichment and rent-seeking than the official budget, which still should be used for production of public goods at the regional level and which is regulated through the existing budget law. Our results allow us to conjecture that the regional governors with federal connections are more likely to use their pressure on the companies to extract this type of additional revenue, eventually leading to the depletion of regional budget. If the effect of this type of governors on tax revenue is negative, the interpretation is straightforward, but it is also forthcoming if there is no effect at all – in this case it would merely mean that the governors are 'cautious' by ensuring the 'average' repayment, but use their above-average effort and repressiveness for other purposes. This is, however, exactly the be-

havior one would expect from a 'roving bandit': appropriating rents to the highest possible extent instead of producing public goods.

We should acknowledge the existence of an alternative explanation. In Russia a substantial portion of tax revenue received in the regions goes to the federal budget (Russian tax system does not allow regions to set their own taxes, with minor exceptions; all tax rates and bases are set by the federal government, though the revenue as attributed either to the regional, or the federal budget, or split between them – in the Putin's period the share of the federal budget increased substantially). In this case channeling money through the 'extra-budgetary' funds is likely to be used to 'keep the money' in the region instead of giving it up to the federal center. However, the regions also gain from the federal budget through the fiscal redistribution system; while some grants are allocated according to a formula, a large portion of financial flows from the center are based on the central governments' discretion. It is reasonable to expect the governments with federal connections to be better at obtaining federal grants (Schultz and Libman (2011) provide evidence of this behavior in a special setting of Russian forest fires), therefore exactly for this group the concern about 'money flowing away from the region' should be less pronounced. Yet it is this group for which we find the effects reported – hence, our findings are more likely to be consistent with the roving bandit interpretation.

Finally, the last interesting observation to be made based on *Table 4* is that the effect of the business exit option is significant and *positive:* it means that businessmen, although less repressive than other governors and equal to other governors in terms of the success of tax investigations, generate larger income per audit for the regional budget! This result is, once again, consistent with our argument that businessmen, unlike former federal officials, are less dependent upon effective rent-seeking in the regions they administer, and hence, do not behave like roving bandits. Instead, they pursue other goals. One of them, as mentioned, could be protection of the business and assets; from this point of view, it is clear why they are less repressive, but this explanation is difficult to reconcile with the increasing income from tax audits. Another explanation could be that businessmen, generally speaking, are able to improve the effectiveness of public administration of the region by providing greater incentives to regional bureaucrats. Yet another argument could be that businessmen are more likely to be driven by image considerations than public officials, and hence more concerned about how regional population will perceive their administration. In this case, increasing revenue from taxation to be spent for public goods in the region is also a reasonable strategy.

Table 1: Impact of federal connections on the "success" of tax audits, 2007-2009, dep.var.: share of tax audits, where a violation of the tax law was found, two-way FE (unbalanced panel)

	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE	(7) FE	(8) FE	(9) FE
Federal connections	**0.022****	**0.023****	**0.023****	**0.023****	**0.023****	**0.030****	**0.031****	**0.031****	**0.034****
	(0.011)	**(0.011)**	**(0.011)**	**(0.011)**	**(0.011)**	**(0.012)**	**(0.012)**	**(0.012)**	**(0.013)**
Log income per capita	0.041	0.037	0.033	0.036	0.036	0.036	0.034	0.037	0.040
	(0.039)	(0.036)	(0.035)	(0.035)	(0.035)	(0.035)	(0.034)	(0.035)	(0.035)
Log urbanization	0.483	0.502	0.481	0.470	0.465	0.493	0.469	0.465	0.434
	(0.417)	(0.386)	(0.376)	(0.383)	(0.385)	(0.389)	(0.376)	(0.371)	(0.368)
Log population	**-1.001***	**-1.050****	**-1.047****	**-1.038****	**-1.033****	**-1.121****	**-1.142****	**-1.176****	**-1.244****
	(0.514)	**(0.492)**	**(0.486)**	**(0.492)**	**(0.492)**	**(0.506)**	**(0.498)**	**(0.495)**	**(0.507)**
Log total number of investigations		-0.020	-0.020	-0.020	-0.020	-0.024	-0.023	-0.023	-0.02
		(0.019)	(0.019)	(0.019)	(0.019)	(0.018)	(0.018)	(0.018)	(0.019)
Share of investigations involving police			**0.023*****	**0.023*****	**0.023*****	**0.024*****	**0.022*****	**0.022*****	**0.022*****
			(0.005)	**(0.005)**	**(0.005)**	**(0.005)**	**(0.006)**	**(0.005)**	**(0.005)**
Federal transfers				-0.003	-0.004	-0.002	-0.001	-0.002	-0.001
				(0.012)	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)
Retention rate					0.005	0.002	0.001	0.001	0.005
					(0.015)	(0.015)	(0.014)	(0.015)	(0.015)
Local origin						0.011	0.006	0.006	0.012
						(0.008)	(0.011)	(0.011)	(0.013)
Age							0.001	0.001	0.000
							(0.001)	(0.001)	(0.001)
Repressiveness in all areas of the criminal law								-0.015	-0.018
								(0.033)	(0.033)
Business exit option									0.020
									(0.022)
Constant	8.074	8.663	8.936	8.939	8.922	9.802	10.404*	10.929*	12.242*
	(5.511)	(5.506)	(5.524)	(5.514)	(5.539)	(5.978)	(5.973)	(6.066)	(6.306)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	195	195	195	195
Regions	68	68	68	68	68	68	68	68	68
R^2	0.351	0.364	0.377	0.377	0.378	0.389	0.394	0.394	0.400

Note: robust standard errors in parentheses; *** 1% significance level; ** 5% significance level; * 10% significance level. Significant results marked bold.

Table 2: Impact of federal connections on the repressiveness in tax justice, 2007-2009, dep.var.: share of prison penalties in the total number of prison penalties and conditional releases, two-way FE (unbalanced panel)

	(10) FE	(11) FE	(12) FE	(13) FE	(14) FE	(15) FE	(16) FE	(17) FE	(18) FE	(19) FE	(20) FE
Federal connections	**0.051****	**0.051****	**0.050****	**0.052****	**0.052****	**0.055****	**0.053****	**0.055****	**0.056***	**0.053****	**0.043***
	(0.021)	**(0.021)**	**(0.021)**	**(0.022)**	**(0.022)**	**(0.025)**	**(0.026)**	**(0.024)**	**(0.030)**	**(0.026)**	**(0.023)**
Log income per capita	0.000	0.002	-0.009	0.019	0.020	0.020	0.024	0.014	0.031	0.014	0.003
	(0.107)	(0.104)	(0.106)	(0.129)	(0.129)	(0.130)	(0.130)	(0.136)	(0.132)	(0.149)	(0.134)
Log urbanization	**5.198*****	**5.190*****	**5.121*****	**5.008*****	**4.982*****	**4.996*****	**5.041*****	**5.115*****	**5.157*****	**5.057*****	**5.272*****
	(1.222)	**(1.237)**	**(1.265)**	**(1.267)**	**(1.271)**	**(1.286)**	**(1.272)**	**(1.282)**	**(1.253)**	**(1.237)**	**(1.299)**
Log population	-1.897	-1.877	-1.865	-1.777	-1.748	-1.792	-1.754	-1.769	-1.939	-1.636	-1.432
	(1.449)	(1.476)	(1.504)	(1.510)	(1.537)	(1.624)	(1.639)	(1.610)	(1.600)	(1.772)	(1.615)
Log total number of investigations		0.008	0.007	0.009	0.010	0.008	0.006	-0.002	0.006	0.006	-0.018
		(0.078)	(0.078)	(0.079)	(0.081)	(0.084)	(0.086)	(0.087)	(0.086)	(0.086)	(0.089)
Share of investigations involving police			**0.075****	**0.077****	**0.077****	**0.077****	**0.080****	**0.079****	**0.085****	**0.082****	**0.079****
			(0.034)	**(0.033)**	**(0.033)**	**(0.033)**	**(0.035)**	**(0.035)**	**(0.036)**	**(0.037)**	**(0.034)**
Federal transfers				-0.036	-0.037	-0.036	-0.037	-0.049	-0.040	-0.034	-0.055
				(0.096)	(0.097)	(0.098)	(0.099)	(0.098)	(0.099)	(0.104)	(0.098)
Retention rate					0.027	0.025	0.026	0.027	0.019	0.026	0.005
					(0.091)	(0.094)	(0.094)	(0.092)	(0.100)	(0.094)	(0.094)
Local origin						0.006	0.015	0.017	0.016	0.016	-0.015
						(0.028)	(0.026)	(0.025)	(0.027)	(0.027)	(0.021)
Age							-0.001	-0.001	-0.001	-0.001	-0.000
							(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Number of overall criminal convictions								0.000			0.000
								(0.000)			(0.000)
Number of criminal convictions in tax crimes									0.001		
									(0.001)		
Repressiveness in all areas of the criminal law										0.051	
										(0.209)	
Business exit option											**-0.114*****
											(0.040)
Constant	-44.296**	-44.539**	-43.644**	-43.616**	-43.705**	-43.265**	-44.384**	-45.039**	-43.439**	-46.197**	-51.680**
	(17.948)	(17.854)	(18.114)	(18.232)	(18.258)	(18.893)	(19.397)	(19.413)	(17.987)	(19.554)	(20.465)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	195	195	195	195	195	195
Regions	68	68	68	68	68	68	68	68	68	68	68
R^2	0.079	0.079	0.086	0.087	0.088	0.088	0.089	0.091	0.101	0.089	0.100

Note: see Table 1. One of the regions (Belgorod) exhibits an enormously high level of repressiveness (equal to one), but excluding it does not change the results.

Table 3: Impact of federal connections on the repressiveness in tax justice, 2007-2009, dep.var.: share of prison penalties in the total number of prison penalties and conditional releases, two-way FE (unbalanced panel), *only regions where the sum of the number of arrests and conditional releases is different from zero*

	(21) FE	(22) FE	(23) FE	(24) FE	(25) FE	(26) FE	(27) FE	(28) FE	(29) FE	(30) FE	(31) FE
Federal connections	**0.062****	**0.061****	**0.060****	**0.057****	**0.057****	**0.058****	**0.058****	**0.060****	**0.060****	**0.058****	**0.050****
	(0.025)	**(0.025)**	**(0.025)**	**(0.026)**	**(0.026)**	**(0.026)**	**(0.027)**	**(0.025)**	**(0.030)**	**(0.028)**	**(0.025)**
Log income per capita	-0.021	-0.019	-0.030	-0.083	-0.084	-0.084	-0.084	-0.087	-0.082	-0.116	-0.121
	(0.117)	(0.115)	(0.117)	(0.123)	(0.122)	(0.122)	(0.122)	(0.124)	(0.122)	(0.128)	(0.125)
Log urbanization	**4.722*****	**4.693*****	**4.609*****	**4.721*****	**4.726*****	**4.726*****	**4.727*****	**4.788*****	**4.858*****	**4.701*****	**4.827*****
	(1.240)	**(1.258)**	**(1.293)**	**(1.333)**	**(1.343)**	**(1.346)**	**(1.349)**	**(1.358)**	**(1.323)**	**(1.269)**	**(1.397)**
Log population	-1.538	-1.495	-1.463	-1.547	-1.549	-1.558	-1.557	-1.583	-1.720	-0.878	-1.373
	(1.531)	(1.549)	(1.589)	(1.641)	(1.661)	(1.769)	(1.774)	(1.751)	(1.705)	(1.911)	(1.767)
Log total number of investigations		0.018	0.018	0.018	0.018	0.017	0.017	0.010	0.017	0.019	-0.013
		(0.082)	(0.083)	(0.083)	(0.084)	(0.087)	(0.088)	(0.090)	(0.088)	(0.088)	(0.096)
Share of investigations involving police			**0.089*****	**0.087*****	**0.087*****	**0.087*****	**0.087*****	**0.086*****	**0.092*****	**0.100*****	**0.090*****
			(0.025)	**(0.025)**	**(0.025)**	**(0.025)**	**(0.027)**	**(0.027)**	**(0.027)**	**(0.031)**	**(0.029)**
Federal transfers				0.057	0.057	0.057	0.057	0.044	0.056	0.059	0.0470
				(0.077)	(0.080)	(0.083)	(0.083)	(0.087)	(0.083)	(0.085)	(0.086)
Retention rate					-0.004	-0.004	-0.003	0.002	-0.010	-0.010	-0.005
					(0.124)	(0.125)	(0.128)	(0.129)	(0.136)	(0.124)	(0.130)
Local origin						0.001	0.003	0.004	0.004	0.006	-0.008
						(0.030)	(0.030)	(0.030)	(0.030)	(0.032)	(0.025)
Age							-0.000	-0.000	-0.001	-0.001	-0.000
							(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Number of overall criminal convictions								0.000			0.000
								(0.000)			(0.000)
Number of criminal convictions in tax crimes									0.001		
									(0.001)		
Repressiveness in all areas of the criminal law										0.336	
										(0.316)	
Business exit option											**-0.140****
											(0.056)
Constant	-42.971**	-43.335**	-42.524**	-42.394**	-42.425**	-42.300**	-42.301**	-42.704**	-41.841**	-51.354**	-45.691**
	(18.769)	(18.729)	(19.027)	(19.135)	(19.015)	(20.249)	(20.315)	(20.283)	(18.774)	(21.209)	(20.650)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	182	182	182	182	182	182	182	182	182	182	182
Regions	68	68	68	68	68	68	68	68	68	68	68
R^2	0.103	0.103	0.114	0.117	0.117	0.117	0.117	0.119	0.128	0.127	0.128

Note: see Table 1

Table 4: Impact of federal connections on the money collected for the due to tax audits, 2007-2009, dep.var.: additional revenue of the Russian budget per tax audit in the region, two-way FE (unbalanced panel)

	(32) FE	(33) FE	(34) FE	(35) FE	(36) FE	(37) FE	(38) FE	(39) FE
Federal connections	**-0.209***	**-0.209***	**-0.210***	**-0.216***	**-0.347****	**-0.340****	**-0.339****	**-0.271***
	(0.120)	**(0.121)**	**(0.124)**	**(0.124)**	**(0.151)**	**(0.151)**	**(0.151)**	**(0.142)**
Log income per capita	0.917	0.921	0.901	0.888	0.866	0.852	0.858	0.914
	(0.633)	(0.625)	(0.695)	(0.706)	(0.688)	(0.692)	(0.749)	(0.755)
Log urbanization	14.332	14.364	14.448	14.88	14.455	14.324	14.314	13.634
	(8.953)	(8.978)	(8.969)	(9.028)	(8.909)	(8.898)	(8.891)	(8.695)
Log population	-10.587	-10.593	-10.657	-11.112	-9.639	-9.789	-9.860	-11.992
	(8.621)	(8.657)	(8.658)	(8.816)	(8.752)	(8.705)	(8.887)	(8.875)
Share of investigations involving police		-0.033	-0.035	-0.027	-0.038	-0.046	-0.048	-0.047
		(0.233)	(0.230)	(0.232)	(0.234)	(0.234)	(0.227)	(0.231)
Federal transfers			0.027	0.048	0.018	0.023	0.021	0.058
			(0.342)	(0.344)	(0.344)	(0.347)	(0.355)	(0.355)
Retention rate				-0.476	-0.425	-0.429	-0.429	-0.334
				(0.731)	(0.741)	(0.742)	(0.744)	(0.761)
Local origin					**-0.219****	**-0.248***	**-0.248***	-0.082
					(0.104)	**(0.142)**	**(0.141)**	(0.102)
Age						0.003	0.003	0.000
						(0.007)	(0.007)	(0.005)
Repressiveness in all areas of the criminal law							-0.031	-0.127
							(0.657)	(0.671)
Business exit option								**0.552****
								(0.212)
Constant	-48.066	-48.450	-48.520	-47.532	-62.058	-58.180	-57.099	-18.453
	(114.530)	(114.250)	(114.440)	(113.261)	(109.084)	(109.010)	(108.887)	(115.232)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	195	195	195
Regions	68	68	68	68	68	68	68	68
R^2	0.179	0.179	0.179	0.186	0.199	0.200	0.200	0.213

Note: see Table 1

5. Robustness checks and endogeneity

We implemented a number of robustness checks to validate our results. First, it is possible that the 'repressions' against companies' managers and owners are implemented through other channels than merely tax law. For this purpose we looked at the extent of repressions for another area relevant in the context: the so-called '**illegal entrepreneurship**'. According to the Russian criminal code individuals can be prosecuted with charges of illegal entrepreneurship when they operate without legal registration (license), or cause loses or harm to other citizens or the state. Potential penalties vary from fines (up to 500 thousand rubles), over conditional release to prison penalty (e.g. up to 5 years for gang crime). We used data from criminal courts for the period 2007-2009 to run the two-way fixed effects regressions in order to estimate the effect of our federal connections dummy (*explanatory variable*) on repression in cases of illegal entrepreneurship. The key elements of the models remain the same, with one exception: while we control for the same covariates as previously we further add the number of convictions in illicit entrepreneurship. The results are presented in *Appendix B* and

show that also in cases of illicit entrepreneurship governors with federal ties mostly have a positive and significant relationship with prison penalties in the total number of convictions.[26]

Second, a number of further tests change the estimation strategy we use and the composition of the sample. To start with, since in a number of regressions we have the dependent variable bounded between 0 and 1, we re-estimate our regressions transforming three dependent variables "successful tax investigation", "repressiveness of tax justice", and "repressiveness in cases of illicit entrepreneurship" to **log-odd ratios**.[27] The results are reported in *Appendix C* and entirely confirm our findings. Furthermore, as mentioned, there is one more region in our sample where the headquarters of some large corporations are located and the same problems as in case of the City of Moscow can occur – **St. Petersburg**. The effect is much smaller than for Moscow, but we still controlled for it, re-estimating all regressions from *Tables 1-4* excluding St. Petersburg. The results of the estimates almost always confirm the previous findings. Furthermore, since in the main regressions the urbanization was defined as the size of the total urban population and may be correlated with another explanatory variable (population), we have replaced it by the **share of urban population** in the total regional population and re-estimated all regressions from *Tables 1-4*: the effects of federal connections remain unchanged.

Furthermore, while the two-way fixed effects estimations should rule out the omitted variable bias, **reverse causality** still remains a source of possible endogeneity. It is possible that the governors were appointed to the regions where tax collection did have particular characteristics already. In order to check for these effects, we run fixed-effects instrumental variable estimations reported in *Table 5.* As the instrument we use the *average federal connections level in the so-called federal districts,* groups of regions established by the Putin in 2000. There have been seven federal districts in Russia throughout most of the time of our investigation (in 2010 one of them was split into two). The districts were created in 2000 and differed quite substantially from the old system of the so-called economic districts (ekonomicheskiy rayon) used already by the Soviet planning authorities to group regions together, as well as from the popular self-perception of the regions (in fact, federal districts rather reflected the system of the military districts used by the Russian army). Each district received a presidential plenipotentiary representative in charge with monitoring the activity of regional governors. For us, it is particularly important that until mid-2009 the representatives (in many

[26] In addition, in *Table B2* we exclude the regions which have not reported any conditional releases and prison penalties in cases of illegal entrepreneurship. In this case we did not find significant results. Hence, the cautious interpretation requires us to state that we only partially confirm the presence of repressive behavior in the area of illegal entrepreneurship of the governors with federal connections.

[27] Log (Variable / (1 – Variable))

cases bureaucrats with military or security background and part of the presidential Administration) had a vital role in appointment of the regional governors: they had to present to the president a list of candidates for the gubernatorial position from which the president had to select one. Thus, it is plausible to assume that the patterns of appointment have been district-specific. The results of the fixed-effects instrumental-variable estimations entirely confirm our findings for the efficiency and credibility of the tax administration. We find no effect for the revenue from tax audits, however; nevertheless, the findings still indicate that regional governors with federal connections, in spite of higher success rate of monitoring and repressiveness of tax law, are unable to generate larger revenue for the federal budget – a result again consistent with the roving bandit interpretation.

Table 5: Impact of federal connections, instrumental variable estimates, 2007-2009

	(IV1) FE instrumental variables	**(I21) FE instrumental variables**	**(IV3) FE instrumental variables**
Dep. var.	**Repressiveness, tax justice**	**Success of tax investigations**	**Additional budgetary revenue**
Federal connections	**0.346****	**0.087****	-0.363
	(0.146)	**(0.037)**	(0.393)
Log income per capita	0.052	0.052	0.890
	(0.174)	(0.042)	(0.604)
Log urbanization	**5.133*****	0.468	**14.366***
	(1.361)	(0.464)	**(8.054)**
Log population	-0.974	-0.799	-11.069
	(1.762)	(0.488)	(8.257)
Observations	194	194	194
Regions	67	67	67
Time FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
First-stage F-stat	**10.65*****	**10.65*****	**10.65*****

Note: see Table 1. Instrumented variable is "Federal connections", instrument used are average federal connections in the particular federal district in a particular year

Furthermore, we attempted to identify the causality by using the **placebo** test often applied in difference-in-difference regressions. Specifically, we replace the dummy federal connections by one of the following dummies: (1) dummy equal to one for the regions where *in the next year* a governor with federal connections will be appointed (e.g., if in the region X the governor with federal connections was appointed in 2008, the dummy is equal to 1 in 2007; pre-treatment dummy) and (2) dummy equal to one for the first year after appointment of the governor (in the example described – 1 in 2008; first year post-treatment dummy); we do not consider further years as the set of observations is extremely small. Then we replicated

our regressions inserting these variables one-by-one. The results are as follows: for the pre-treatment dummy we find *no significant effects* and for the first year post-treatment dummy we find *a significant effect* consistent with those presented in section 4. This is entirely in line with the main story of this paper: in the pre-treatment year there are no anticipatory effects; once the governor is appointed, he starts using tax collection to establish control over assets (we have to point out that this approach does not solve the problem of endogenous selection in to treatment though, which was targeted by our IV estimations).

In the next step, we look exclusively on the regions where **at least for one year** the governor had federal connections. The reason is that we have multiple regions in our sample, where governors with federal connections never have been present; possibly, there are structural differences between these regions and the regions where federal officials were appointed as governors, which make these two groups not comparable. Since the set of the regions where the governor for at least one year had federal connections is rather small, we restrict ourselves to simple mean comparison in this case. The results are reported in *Appendix D* and largely support our previous findings. Not only the share of uncovered tax violation increased, but also the repressiveness in the areas of tax law and illegal entrepreneurship increased significantly after the appointment of a governor with federal connections. The mean comparison of the variable "revenue per audit" is insignificant; thus, our results are again confirmed.

Finally, we test for yet another characteristic of Russian politics, which may affect the chances of gubernatorial appointments and federal career prospects. Specifically, we look at the **ethnic identity** of governors. The reason is that a number of regions are run by indigenous ethnic groups after which the regions are named. These so-called "titular nationalities" are of "non-Slavic" ethnic origin and are found in Northern Russia, Siberia, Northern Caucasus, and in the Volga area. Especially in the Northern Caucasus and Volga regions, the Russian government explicitly selects governors with local ethnicities to achieve higher acceptance by the region's population and its elites. However, at the same time, members of some of these ethnic groups are less likely to continue their career elsewhere at a position comparable to that they occupy in their region. In other words, ethnic affiliation may have a positive effect on the gubernatorial appointment decisions and negative effect on the career prospects outside the region in a federal institution.[28] To capture this effect we control for two specific minorities.

[28] The North Caucasian federal district is an excellent example for this observation. It includes six regions with "titular nationalities": Dagestan, Ingushetia, Kabardino-Balkaria, Karachay-Cherkessia, North Ossetia-Alania, and Chechnya (in fact this federal district also comprises Russian dominated Stavropol region). Each of the six regions is ruled by a governor which belongs to the respective indigenous ethnic group. However the presidential envoy of the North Caucasian federal district, Alexander Khloponin, is an ethnic Russian, previously influential businessman and former governor of Krasnoyarsk (a distant Siberian region) without any former experience in

First, we control for governors who belong to "discriminated nationalities" which are a sub-group of previously discussed "titular nationalities". This group includes all governors with a North Caucasian, Volga Muslim, and Siberian ethnic background which are considered to be particularly discriminated, because due to their appearance and names they can be easily identified as "non-Russians".[29] Second, we control for Jewish origin (there are few of them in our sample). Since ethnic affiliation is an important issue for regional politicians in Russia, governors explicitly mention their ethnicity in official biographies.[30] Based on this data we have created a dummy equal to 1 for "discriminated ethnicities" and Jewish origin, which is 0 if otherwise.[31]

We cannot simply add this variable to our panel data estimations, since there is no variation over time. However, we still checked the impact of this variable on our sample by splitting the sample into two groups: regions ruled by "discriminated ethnicities" and other regions. If we look at the second sample, we find a significant and positive effect of the federal connections on the repressiveness and share of success of tax investigations; there is no influence on the income per tax audit. For the first sample, there is only a positive influence on the share of success; for two other dependent variables we have insignificant results. Overall, it is likely that our results are to a greater extent driven by the regions ruled by "not discriminated ethnicities", what is once again in line with the roving bandit argument. There is some evidence obtained in line with our argument from the regions ruled by "discriminated ethnicities" as well, what may reflect the actual extent of discrimination.

6. Conclusion

The aim of the paper was to investigate whether 'roving bandits' among autocrats are more likely to exhibit higher level of predatory behavior than 'stationary bandits'. Unlike the previous literature looking primarily at political stability and age as factors turning autocrat into a roving bandit, this paper investigated a different source of this behavior – the presence of an outside option, i.e. of opportunity to rule somewhere else outside the current jurisdiction in the future. For this purpose, we had to focus our attention on sub-national rulers, and there-

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the conflict-ridden Northern Caucasus (also an interesting case from the local origin perspective, see previous discussion).

[29] According to this classification the governors of our sample with Mordva, Chuvash, and Komi ethnic background are not considered to be discriminated ethnicities.

[30] There were only two cases in which the ethnicity of the governor was not explicitly mentioned, but instead the ethnic background of the parents.

[31] There was one difficult cases in our sample, when parents of the governor belong to different ethnicities. One should mention Tuleev's (governor of the Kemerovo region) case: his father was Kazakh and mother Tatar; we assigned dummy "discriminated ethnicity" to be equal to 1 in this case.

fore investigated the behavior of regional governors in the Russian Federation. While in the past Russian regions were often ruled by well-entrenched politicians considering the governor's position as the 'crowning achievement' of their career, in the late 2000s a new type of governors emerged: bureaucrats from federal agencies and institutions considering the appointment in the region merely a short-term assignment and expecting to continue their career someplace else. We have studied the predatory behavior of these governors as opposed to other regional rulers focusing on their influence on the performance of regional tax collection agencies.

The results of the paper are striking. We find that regional governors with federal connections are, on the one hand, increasing the share of audits where the tax evasion was uncovered and make the regional tax jurisprudence more repressive (for instance, courts are less likely to chose conditional release as opposed to imprisonment in tax matters), but, on the other hand, have a negative or insignificant effect on the actual revenue from tax auditing. Thus, this additional effort and pressure on tax payers do not result in an increase of budgetary revenue – on the contrary, some regressions even indicate a decrease of the income of the budget from additional audits in these regions. These findings are highly consistent with the predatory behavior of roving bandits: we claim that regional governors with federal connections in Russia are more likely to use tax pressure to achieve control over private companies, but at the same time channel the revenue from this control outside the public budget (which is – at least partially – used to finance public goods in the regions) towards extra-budgetary funds (or, possibly, attempting to directly acquire shares in threatened companies into their personal possession). Overall, the presence of the outside option seems to be a factor strongly contributing to the increase of predation in autocratic regimes.

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Appendix A: Data

Table A1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	195	54.882	8.562	34.000	75.000
Business exit option	195	0.113	0.317	0.000	1.000
Federal connections	195	0.092	0.290	0.000	1.000
Federal transfers	195	0.334	0.156	0.002	0.802
Local origin	195	0.774	0.419	0.000	1.000
Log additional tax revenue per audit	195	7.526	0.659	5.798	9.191
Log income per capita	195	9.359	0.345	8.404	10.465
Log population	195	14.046	0.854	10.810	15.453
Log total number of investigations	195	6.715	0.838	3.219	8.398
Log urbanization	195	13.658	0.907	10.401	15.338
Number of convictions (illicit entrepreneurship)	195	10.031	10.851	0.000	56.000
Number of convictions (tax evasion)	195	26.349	25.656	0.000	151.000
Number of overall convictions	195	11244.160	8118.531	366.000	37542.000
Repressiveness (illicit entrepreneurship)	195	0.103	0.237	0.000	1.000
Repressiveness (tax evasion)	195	0.061	0.127	0.000	1.000
Repressiveness in all areas of criminal law	195	0.443	0.099	0.204	0.959
Retention rate	195	0.738	0.182	0.087	1.150
Share of investigations involving police	195	0.100	0.110	0.000	1.451
Share of successful audits	195	0.984	0.026	0.819	1.000

Table A2: Description of data

Variable	Description	Period	Source
Additional tax revenue per audit	Revenue of the budget obtained per investigation of the tax authority, '000 Rubles	2007-2009	Regional branches of the Federal Tax Service
Age	Age of the governor, years	2007-2009	Official websites of the regional governors, media sources
Business exit option	1 if the governor has been an owner, CEO or top manager of a large company prior to his appointment	2007-2009	Official websites of the regional governors, media sources
Federal connections	1 if the governor in the region has served in a federal agency or institution since 2000 (including this year), 0 otherwise	2007-2009	Various media sources
Federal transfers	Total federal transfers to the regional budget / Total expenditures of the regional budget (including budgets of municipalities)	2007-2009	Federal Treasury
Income per capita	Income per capita in the region, Rubles per month	2007-2009	Rosstat
Local origin	1 if the governor in the region spent the majority of the pre-office life in the region, 0 otherwise	2007-2009	Various media sources
Number of convictions (illicit entrepreneurship)	Number of convictions for illicit entrepreneurship in the region	2007-2009	Federal Arbitrage Court
Number of convictions (tax evasion)	Number of convictions for tax evasion in the region	2007-2009	Federal Arbitrage Court
Number of overall convictions	Total number of criminal convictions	2007-2009	Federal Arbitrage Court
Population	Total population of the region, mln. people	2007-2009	Rosstat

Variable	Description	Period	Source
Repressiveness (illicit entrepreneurship)	Number of convictions for illicit entrepreneurship sentenced to prison / Number of convictions for illicit entrepreneurship sentenced to prison and to conditional release	2007-2009	Federal Arbitrage Court
Repressiveness (tax evasion)	Number of convictions for tax evasion sentenced to prison / Number of convictions for tax evastion sentenced to prison and to conditional release	2007-2009	Federal Arbitrage Court
Repressiveness in all areas of criminal law	Number of convictions sentenced to prison / Number of convictions sentenced to prison and to conditional release (all areas of criminal justice)	2007-2009	Federal Arbitrage Court
Retention rate	Share of tax revenue of the consolidated regional budget (regions and municipalities) in the overall tax revenue from the region's territory	2007-2009	Rosstat, Federal Treasury
Share of investigations involving police	Share of tax audits investigated with the support of police	2007-2009	Local branches of the Federal Tax Service
Share of successful audits	Share of tax audits uncovering a tax violation	2007-2009	Local branches of the Federal Tax Serivce
Total number of investigations	Number of all tax audits in the region	2007-2009	Local branches of the Federal Tax Service
Urbanization	Urban population of the region, people	2007-2009	Local branches of the Federal Tax Service

Note: Rosstat stands for the Russian Statistical Agency

Appendix B: Repressiveness in matters of illegal entrepreneurship

Table B1: Impact of federal connections on the repressiveness in the matters of illegal entrepreneurship, 2007-2009, dep.var.: share of prison penalties in the total number of prison penalties and conditional releases, two-way FE (unbalanced panel)

	(B1) FE	(B2) FE	(B3) FE	(B4) FE	(B5) FE	(B6) FE	(B7) FE	(B8) FE	(B9) FE	(B10) FE	(B11) FE
Federal connections	**0.203***	**0.209***	**0.208***	**0.209***	**0.212***	**0.184***	**0.174***	**0.174***	0.153	**0.169***	**0.183***
	(0.121)	**(0.124)**	**(0.124)**	**(0.124)**	**(0.124)**	**(0.108)**	**(0.103)**	**(0.104)**	(0.104)	**(0.096)**	**(0.102)**
Log income per capita	0.258	0.236	0.225	0.249	0.260	0.260	0.278	0.278	0.229	0.184	0.286
	(0.309)	(0.315)	(0.315)	(0.335)	(0.319)	(0.319)	(0.319)	(0.325)	(0.321)	(0.336)	(0.327)
Log urbanization	3.226	3.338	3.275	3.177	2.910	2.798	3.012	3.011	2.747	3.172	2.894
	(2.352)	(2.416)	(2.435)	(2.457)	(2.451)	(2.421)	(2.445)	(2.480)	(2.467)	(2.428)	(2.526)
Log population	-8.643	**-8.922***	**-8.912***	-8.835	-8.538	-8.181	-7.997	-7.996	-7.455	-6.825	-8.246
	(5.269)	**(5.266)**	**(5.288)**	(5.367)	(5.263)	(5.368)	(5.506)	(5.515)	(5.501)	(5.500)	(5.762)
Log total number of investigations		-0.115	-0.116	-0.114	-0.102	-0.085	-0.096	-0.096	-0.097	-0.093	-0.084
		(0.121)	(0.121)	(0.121)	(0.121)	(0.125)	(0.129)	(0.130)	(0.127)	(0.127)	(0.140)
Share of investigations involving police			0.069	0.071	0.066	0.063	0.075	0.075	**0.112***	0.096	0.076
			(0.057)	(0.058)	(0.057)	(0.058)	(0.061)	(0.061)	**(0.063)**	(0.063)	(0.061)
Federal transfers				-0.031	-0.045	-0.053	-0.058	-0.058	-0.059	-0.025	-0.053
				(0.145)	(0.144)	(0.145)	(0.146)	(0.152)	(0.146)	(0.148)	(0.156)
Retention rate					0.278	0.291	0.296	0.296	0.300	0.292	0.312
					(0.227)	(0.230)	(0.236)	(0.238)	(0.242)	(0.232)	(0.244)
Local origin						-0.046	-0.002	-0.002	0.002	0.012	0.022
						(0.060)	(0.061)	(0.061)	(0.058)	(0.057)	(0.071)
Age							-0.005	-0.005	-0.006	-0.006	-0.005
							(0.004)	(0.004)	(0.004)	(0.005)	(0.004)
Number of overall criminal convictions								0.000			0.000
								(0.000)			(0.000)
Number of criminal convictions in matters of illicit entrepreneurship									0.007		
									(0.005)		
Repressiveness in all areas of the criminal law										0.504	
										(0.624)	
Business exit option											0.084
											(0.129)
Constant	74.936	78.306	79.126	79.150	78.224	74.664	69.284	69.294	65.727	51.345	74.218
	(74.688)	(74.251)	(74.646)	(74.952)	(73.277)	(74.628)	(77.710)	(78.270)	(77.932)	(73.987)	(83.738)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	195	195	195	195	195	195
Regions	68	68	68	68	68	68	68	68	68	68	68
R^2 (within)	0.074	0.078	0.079	0.079	0.086	0.088	0.091	0.091	0.105	0.098	0.092

Note: see Table 1

Table B2: Impact of federal connections on the repressiveness in the matters of illegal entrepreneurship, 2007-2009, dep.var.: share of prison penalties in the total number of prison penalties and conditional releases, two-way FE (unbalanced panel), *only regions where the sum of the number of arrests and conditional releases is different from zero*

	(B12) FE	(B13) FE	(B14) FE	(B15) FE	(B16) FE	(B17) FE	(B18) FE	(B19) FE	(B20) FE	(B21) FE	(B22) FE
Federal connections	0.242	0.241	0.239	0.240	0.254	0.246	0.243	0.246	0.245	0.175	0.258
	(0.187)	(0.192)	(0.192)	(0.194)	(0.194)	(0.169)	(0.165)	(0.165)	(0.172)	(0.129)	(0.162)
Log income per capita	0.565	0.566	0.554	0.561	0.600	0.603	0.610	0.618	0.611	0.417	0.683
	(0.423)	(0.414)	(0.415)	(0.493)	(0.471)	(0.470)	(0.471)	(0.468)	(0.470)	(0.453)	(0.471)
Log urbanization	-3.120	-3.147	-3.410	-3.402	-4.591	-4.484	-3.980	-3.594	-4.021	-2.190	-3.664
	(9.045)	(9.082)	(9.185)	(9.213)	(9.092)	(9.150	(9.301)	(9.378)	(9.517)	(8.514)	(9.361)
Log population	-8.768	-8.728	-8.591	-8.604	-8.171	-8.140	-8.528	-8.925	-8.501	-4.070	-9.189
	(8.862)	(8.944)	(9.018)	(9.079)	(9.025)	(9.069)	(9.286)	(9.524)	(9.480)	(9.870)	(9.534)
Log total number of investigations		0.011	0.008	0.008	-0.016	-0.011	-0.039	-0.056	-0.038	0.023	-0.003
		(0.178)	(0.178)	(0.180)	(0.180)	(0.184)	(0.189)	(0.200)	(0.188)	(0.178)	(0.222)
Share of investigations involving police			**0.106****	**0.106***	**0.098***	**0.096***	**0.129****	**0.129****	**0.128***	**0.196*****	**0.126***
			(0.053)	**(0.057)**	**(0.054)**	**(0.056)**	**(0.063)**	**(0.063)**	**(0.073)**	**(0.066)**	**(0.063)**
Federal transfers				-0.010	-0.052	-0.057	-0.071	-0.104	-0.070	-0.053	-0.107
				(0.244)	(0.243)	(0.251)	(0.254)	(0.283)	(0.265)	(0.228)	(0.281)
Retention rate					0.396	0.400	0.460	0.473	0.458	0.444	0.475
					(0.435)	(0.443)	(0.459)	(0.465)	(0.465)	(0.466)	(0.467)
Local origin						-0.016	0.129	0.133	0.129	0.156	0.160
						(0.097)	(0.129)	(0.128)	(0.129)	(0.106)	(0.132)
Age							**-0.009***	**-0.009***	**-0.009***	**-0.015*****	**-0.008***
							(0.005)	**(0.004)**	**(0.005)**	**(0.005)**	**(0.004)**
Number of overall criminal convictions								0.000			0.000
								(0.000)			(0.000)
Number of criminal convictions in matters of illicit entrepreneurship									0.000		
									(0.006)		
Repressiveness in all areas of the criminal law										**2.123****	
										(0.822)	
Business exit option											0.193
											(0.151)
Constant	162.800*	162.514*	164.339*	164.338*	174.154**	172.170*	171.211*	171.555*	171.378*	83.709	175.252**
	(82.907)	(83.411)	(83.970)	(84.379)	(83.928)	(86.729)	(87.390)	(87.762)	(87.325)	(68.558)	(87.237)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	151	151	151	151	151	151	151	151	151	151	151
Regions	64	64	64	64	64	64	64	64	64	64	64
R^2 (within)	0.178	0.178	0.181	0.181	0.19	0.191	0.197	0.198	0.197	0.273	0.201

Note: see Table 1

Appendix C: Log-odds transformation

Table C1: Log-odds transformation of the dependent variables bound between 0 and 1, 2007-2009, two-way FE (unbalanced panel)

	(C1) FE	**(C2) FE**	**(C3) FE**
Dep. var.	**Repressiveness, tax justice**	**Repressiveness, illegal entrepre-neurship**	**Share of successful tax investigations**
Federal connections	**1.436*** **	0.047	**0.974** **
	(0.464)	(0.322)	**(0.441)**
Log income per capita	-3.830	**11.123*** **	0.822
	(2.380)	**(3.224)**	(1.561)
Log urbanization	**36.105***	-30.207	**89.351*** **
	(21.257)	(48.742)	**(24.337)**
Log population	**90.354*** **	-58.656	**-86.251*** **
	(30.297)	(57.815)	**(31.884)**
Constant	-1,777.270***	1,180.362***	-12.657
	(485.413)	(330.124)	(318.005)
Time FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	70	42	162
Regions	43	30	66
R^2	0.489	0.457	0.458

Note: all regions, where the number of arrests in tax justice (50) and illegal entrepreneurship (51) is equal to zero, as well as all regions where no arrests or conditional releases in respective crimes were documented, as well as all regions with 100% successful tax investigations (52) are excluded, as in this case it is difficult to correctly calculate the log-odds ratio (due to the fact that log is undetermined at zero).

Appendix D: Mean comparison

Table D1: Mean comparison between various parameters of tax collection activity in *the regions where at least for one year the governor had federal connections only*

Variable	Federal connections = 0	Federal connections = 1	Difference
Share of successful audits	0.955 No. obs.: 14	0.984 No.obs.: 18	-0.029 p-val (difference < 0): 0.0068
Repressiveness of the tax law	0.011 No. obs.: 14	0.067 No. obs.: 18	-0.056 p-val (difference < 0): 0.0179
Repressiveness in the area of illicit entrepreneurship	0.006 No. obs.: 14	0.215 No. obs.: 18	-0.209 p-val (difference < 0): 0.0143
Log revenue per audit	7.422 No. obs.: 14	7.547 No. obs.: 18	-0.125 p-val (difference unequal 0): 0.615