

Varieties of Authoritarianism Matter: Elite Fragmentation, Natural Resources and Economic Growth

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A broad literature suggests that political regimes matter for the growth effect of natural resources. However, while several studies have concentrated on the difference between democracies and autocracies in this respect, an important topic overlooked so far is the differences between varieties of authoritarian regimes. This study uses the political variation across sub-national regions of the Russian Federation under Vladimir Putin to understand how differences in the extent of elite fragmentation in autocracies affects the influence of resource abundance on the economic growth in the short run. We find that polities with fragmented elites underperform those with consolidated elites and link this effect to higher intensity of rent-seeking and higher costs of fights over rents due to the shorter time horizon of the elites.

Keywords: resource curse; varieties of authoritarian regimes; Russian regions; rent-seeking

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1. Introduction

The effects of natural resource abundance on economic performance are strikingly different across the world. An argument, which is frequently found in the literature, looks at the resource abundance as a ‘resource curse’, i.e., resources reduce the growth in a country or a region (Sachs and Warner 2001). The ‘resource curse’ literature experienced several decades of development, resulting in the elaboration of numerous mechanisms and channels of how resources adversely affect economic growth. At the same time, there is also a growing body of research questioning the existence of the negative effect of resource endowment on growth or arguing that the effect of resource endowment differs depending on the characteristics of a country or a region (Rosser 2006; van der Ploeg 2011; Havranek et al. 2016; Badeeb et al. 2017).

Within the literature linking resource abundance and economic growth, a large part looks at issues, which should matter for the growth performance over a prolonged period of time. However, some causal channels are likely to have an effect in the short run as well. First, a factor, which could have short-term implications for growth, is *high volatility* of commodity prices. The extant research generally suggests that macroeconomic volatility adversely affects growth (Aghion and Banerjee 2005). Commodity price volatility is also likely to have a negative effect on the economic performance, in particular because it leads to myopia in public and private decision-making and misallocation of effort and resources (van der Ploeg and Poelhekke 2009; Cavalcanti et al. 2015). Second, resource revenue is likely to cause intensified *fights for rent* (Arellano-Yanguas 2011), which also increases uncertainty for economic agents.

While volatility of resource prices is determined by the global markets, the extent to which resource bonanzas lead to fights over rents depends on the local level of property rights protection and political institutions (Robinson et al. 2006). The goal of this paper is to understand how resource price shocks affect economic growth in the short run conditional on

political institutions (in particular, political regimes). The role of political regimes has already been addressed in the literature; but while the previous studies focused at the differences between democracies and autocracies, this paper aims to unpack the differences between distinct varieties of authoritarian regimes. The topic is of a very high relevance. According to the Freedom House data, as of 2017, 61% of the world's population lived in countries classified as 'not free' or 'partly free'. However, the general label of 'authoritarianism' hides substantial variation in the political organization, power reproduction mechanisms, and hence policy outcomes observed in individual countries (Buono de Mesquita et al. 2005; Besley and Kudamatsu 2008; Wright 2008; Mattes and Rodrigues 2014; Pepinsky 2014). We intend to study how different types of autocracies affect short-term growth effects of natural resources (see also Eifert et al. 2002), in particular focusing at the level of elite consolidation vs. fragmentation in different autocracies.

For this purpose, we use sub-national data from the regions of the Russian Federation. Sub-national data has a number of important advantages, most notably, reducing the unobserved heterogeneity and allowing more detailed investigation of causal mechanisms (Snyder 2001; van der Ploeg and Poelhekke 2017).¹ Russia, as we will show in what follows, belongs to countries where individual regions developed distinct political regimes with different levels of elite consolidation or fragmentation. The period of investigation we chose allows us to mostly capture the short-term effects of resources on growth rather than look at the long-run effects.

We concentrate on *oil extraction* in the regions of Russia: this is a crucial source of rents for the Russian economy in general and for several of its regions.² Because oil extraction can be endogenous to growth, we compute the oil rents in a way that allows us to single out

¹ This is the reason why using local or regional variation became very popular in the research on natural resources in recent years and in line with a booming literature on the growth effects of natural resources (Papyrakis and Gerlagh 2007; Goldberg et al. 2008; James and Aadland 2010; Caselli and Michaels 2013; Borge et al. 2015; Lawer et al. 2017; for a survey see Cust and Poelhekke 2015).

² We do not look at natural gas, which is also very important for the Russian economy, because its extraction locations are closely correlated with that for oil and the gas prices are set following the changes of the oil prices.

the exogenous variation due to changes in global oil prices. Specifically, instead of using the actual oil extraction in a region in year t , we proxy the oil rent by the product of the oil price in the year t and oil extraction in the year t_0 (the year preceding the period of our investigation). Thus, any within-changes of the oil rent in our dataset come from the changes in the prices on the global markets, which none of the Russian regions are able to influence.

The paper, first, finds that resource rent has a negative impact on short-term growth in the regions of Russia. This result fits the argument presented above – resource dependence, because of the high commodity price volatility, could have a negative impact on growth even in the short run.³ On top of that, we find that the negative effect of the resource rent is stronger in authoritarian regimes with fragmented elites. We explain it by the lower predictability of policies and a more intensive fight for rents in the former. Thus, our contributions to the extant literature are twofold. First, we expand and augment the discussion of how political regimes influence the growth effect of natural resources, suggesting that one needs to take the variety of authoritarian regimes into account. Second, we provide yet another piece of evidence that one needs to look at both variation in resource endowments and institutions at the sub-national level to explain economic growth. Looking only at the country-level variation may be insufficient, given that in most resource-rich countries availability of natural resources and political and institutional environment at the provincial level vary a lot (Boutilier 2017).⁴

The remaining part of the paper is organized as follows. The next section presents the theoretical considerations and derives the main hypothesis. Section three presents our empirical strategy. Section four reports the econometric results. Section five discusses the

³ Although we cannot exclude the impact of other mechanisms leading to similar results.

⁴ Furthermore, in addition to the main findings, we demonstrate that analyzing sub-national political regimes, unlike those at the national level, requires not only studying the internal politics of the regions, but also the relations between the regions and the central government (these relations between the center and the regions can also vary across provinces in a single country): in the Russian case, as the paper will demonstrate, it turns out to be a variable of high importance.

specific channels explaining the effects we observe in the Russian case. Section six concludes.

2. Theory and hypotheses

2.1. Resource rents and elite fragmentation

The existing literature suggests a wide spectrum of mechanisms and channels explaining how resource abundance could hurt economic performance. One of these channels is the volatility of commodity prices, which, as already mentioned in the introduction, received substantial attention in recent empirical research. If the prices (and hence resource revenue) are highly volatile, economic agents (firms, households and governments) are likely to make suboptimal decisions eventually suppressing economic growth. On the one hand, during the resource boom phases, agents may overestimate the durability of the resource bonanzas and engage in unproductive investments, wasteful spending⁵ (e.g., Tornell and Lane 1998; Shaxson 2005) and even risky aggressive foreign policy (Friedman 2006). On the other hand, expectations of a reversal in commodity price trends may encourage agents to focus on investment projects with short-term payoff rather than long-term investments.

Another negative consequence of high volatility of resource prices is that it can encourage rent-seeking activities. In a stable environment, an all-out war for rents is less attractive for agents since non-cooperative behavior today is likely to be punished in the long run (Axelrod and Hamilton 1981). In an unstable environment, where the rents are available only for a limited period of time, agents may disregard this risk of future punishment and focus on grabbing the rents as long as they are present. The extent to which rent-seeking will

⁵ For example, these rents may be spent for luxury goods acquired abroad; it is particularly likely to be the case at the sub-national level, where, for instance, the families of the elite members could reside outside the region, e.g., in the national capital.

actually occur, however, depends on the political institutions. A large literature suggests that in democracies well-functioning checks and balances should limit rent-seeking, allowing resource wealth to produce growth (Korhonen 2004; Bulte and Damania 2008; Cabrales and Hauk 2011; Ahmadov and Guliyev 2016), although weak and nascent democracies, where these checks and balances are absent, could exhibit particularly poor economic performance (Collier and Hoeffler 2009). Furthermore, countries with stronger constraints of the executive are less likely to pursue nationalizations in the oil sector (Guriev et al. 2011); oil-rich non-democracies are less likely to allow free media given their limited interest in incentivizing the bureaucrats (Egorov et al. 2009).

In authoritarian regimes, constraints on exercising political power are absent, which should encourage rent-seeking (Gel'man 2017). However, authoritarian regimes are not homogenous as well, and in particular differ in terms of the extent to which ruling elites are willing to engage in the short-term rent extraction or rather restrain their short-term appetites in order to generate more rents in the long run. This choice, in particular, is affected by the extent to which elites expect to stay in power for a prolonged period of time (McGuire and Olson 1996). From this point of view, an important distinction between authoritarian regimes is that of the extent of elite consolidation vs. fragmentation (e.g., Levitsky and Way 2002). In some autocracies, elites are consolidated and fully integrated in a single political machine: there is little open infighting and the political leadership exercises complete control over all factions. In other autocracies, elites are fragmented and consist of multiple factions constantly competing with each other. The political leadership can at best serve as an arbiter between different elite groups and at worst is constantly challenged by various factions. The level of elite consolidation has several implications, which matter for the research question of this paper:

- in case of consolidated elites, their members and the political leadership enjoy longer time horizon and thus are more likely to behave like Olson's (1993) *stationary bandits*, who

constrain their rent-seeking at a given moment of time to ensure revenues in the long run. In case of fragmented elites, factions cannot with certainty predict the outcomes of their struggle and thus have incentive to use the ‘window of opportunity’ to grab resources: elites are more likely to behave like roving bandits.

- the fact that in regimes with fragmented elites several factions fight for rents in an uncoordinated fashion can be conducive to *over-extraction of rents* and higher overall burden on the society as opposed to the case when rents were extracted by a single political actor.⁶ Furthermore, the struggle over rents itself is costly, because it diverts resources from productive activity (Tornell and Lane 1999).
- more intensive struggle of elites in case of their fragmentation should be associated with higher *uncertainty for business* than in case of elite consolidation (Petrova and Bates 2012). In case businesses have political connections,⁷ their performance depends on the position of the elite faction they are tied to, which can change over time. Elite struggles can lead to expropriations by some factions as a tool to harm other groups.⁸

Hence, we expect that because of higher uncertainty of the position of individual elite groups, authoritarian regimes with fragmented elites create an additional source of economic volatility due to more intensive struggle of elites over rents. For resource-abundant states or regions, it means that the elite fragmentation in authoritarian regimes will amplify the negative effects of macroeconomic volatility associated with the dependence on the resource revenue. To reiterate: certainly, political competition is likely to have strong positive effects on growth, but only in case it happens in a rule of law environment with strong checks and balances channeling the behavior of competing parties – as it is the case in democracies. Our goal in

⁶ Similar arguments have been made in the literatures on vertical tax competition, see Flochel and Madies 2002, and decentralized corruption, see Shleifer and Vishny 1993.

⁷ In the limited access order economies like that of Russia, political connections are the necessary prerequisite for business being able to function at all.

⁸ This uncertainty could have certain benefits in terms of the position of the business actors in the political struggles (Gould and Hetman 2008, for instance, suggest that in regimes with fragmented elites business is more likely to dare to support opposition than in regimes with consolidated elites), but, what is important for us, it reduces the likelihood of productive investments on the side of the private business.

this paper is to compare different types of authoritarian regimes, where elite rivalry is contained only by the power of conflicting parties and thus elite fragmentation is likely to lead to uncontrollable rent-seeking. Based on these arguments, we can formulate the main hypothesis of the study as follows:

Resource-rich authoritarian regimes with consolidated elites should exhibit higher growth rates than resource-rich authoritarian regimes with fragmented elites.

2.2. The Russian case

Our analysis, uses Russian sub-national data to test the hypothesis formulated above. Russia is one of the richest resource countries heavily dependent on world oil prices and oil rent. At the same time, Russian regions are also characterized by very large differences in resource endowments and economic performance (Solanko 2008). For oil and gas, for example, only about one third of regions of Russia actually has any noticeable extraction of these resources; and relatively few (in the Western Siberia, in the Far East and in the Volga regions) produce sufficient amount to generate sizable rents. While Russian central government operates a fiscal equalization mechanism redistributing revenue from richer regions (mostly with large natural resource endowment) to poorer provinces (Ermashova and Mikesell 2016), economic disparities persist even after this redistribution. As of 2016, there is the richest region of Russia has a GDP per capita exceeding that of the poorest region by 18 times.⁹

Russia, as are many other large countries of the world (McMann et al. 2016), is characterized by enormous political differences between individual provinces. These differences emerged in the 1990s during the era of political weakness of the federal government of Boris Yeltsin (Stoner-Weiss 1997; Gel'man 1999; Hale 2003; Sharafutdinova 2006; Obydenkova 2008, 2012), but persisted in the 2000s, in spite of the re-centralization

⁹ Official Rosstat data. Autonomous okrugs excluded.

effort by Vladimir Putin (Obydenkova and Libman 2013). In the 1990s, the difference between Russian sub-national regimes was occasionally characterized as that between democracies and autocracies, though already during that era it was usual for the literature to acknowledge that the distribution of regime types in Russia is skewed: while some regions created consolidated authoritarian regimes, others were immature weak democracies at best (Obydenkova and Libman 2015). As of now, the literature treats all Russian regions as autocratic: but there are still big differences in terms of the particular variety of authoritarianism in individual provinces, (Panov and Ross 2013; Saikkonen 2016; Reuter and Buckley 2017), including the extent of elite fragmentation (Sharafutdinova 2011).

From this point of view, Russia appears to be a compelling testing ground for investigating our hypothesis. However, before we proceed to the empirical analysis, it is essential to solve yet another important problem: the operationalization of sub-national political regimes and, in particular, of the extent of elite fragmentation or consolidation. There exists an intensive debate in the literature as to how to measure sub-national political variation (e.g., Giaurdy 2013; Gervasoni 2010; McMann 2018). The following subsection describes the approach we suggest for achieving this goal.

2.3. Operationalization of sub-national political regimes

To start with, we need to acknowledge an important distinction between the sub-national and the national political regimes: sub-national regimes are not merely a product of internal regional development but also an outcome of the interaction between the regional administrations and the central government. In Russia in the 1990s, as mentioned, the weakness of the central government provided ample opportunities for the autonomous formation of regional political regimes. Governors dependence on Moscow was very small.

Most importantly, since the governors were publicly elected,¹⁰ they enjoyed their own legitimacy rivaling that of the federal center (Blanchard and Shleifer 2001). Under Putin, the bargaining position of the governors went down due to the extensive political, fiscal and regulatory centralization. In 2004, Putin abolished direct elections of the governors, replacing them by the de-facto appointment by the federal center. In 2012, the gubernatorial elections were reintroduced, but in reality, the federal president kept full discretion in deciding who will run a particular region (Blakkisrud 2015). Furthermore, while in the 1990s the federal politics exhibited the competition of several political blocs, some supported by powerful regional governors, since early 2000s a monopoly ‘party of power’ – the *United Russia* UR (*Edinaya Rossiya*, originally *Edinstvo*) emerged, which absorbed regional political machines and became an important instrument of federal control over regions (Reuter 2010). UR turned into the dominant force in almost all regional parliaments; however, while in some regions its control was absolute, in others much more pluralism persisted, with other parties and political groups also present in the legislature.

One of the consequences of the change in the relations between the center and the regions in the 2000s was the gradual replacement of the old governors, who came to power in the 1990s and were legitimized by elections, by new governors appointed by Moscow and much more dependent on the federal center. It happened slowly: in the first years, federal government frequently reappointed old influential regional incumbents.¹¹ Introduction of appointments did not end the tenure of the incumbents; they stayed in power until the end of their term. Over time, however, the federal government became more active in replacing the old governors by new ones (Chebankova 2005; Goode 2006), but even then, decisions concerning individual regions differed substantially, taking the specifics of regional politics into account. In any case, the new appointees, who have never legitimized their position

¹⁰ All regions instituted elections of the governors since 1996; some, however, used this practice since early 1990s.

¹¹ These incumbents even benefitted from the introduction of appointments, as they were freed from the constraints of the term limits they were subjected to during the era of public elections, see Sharafutdinova 2010.

through the public vote, almost never possess the influence and the power resources comparable to that of the governors who originally came to power through elections. Over a relatively long period of time, different types of governors (elected in the past and appointed by the president after the institutional reform of 2004) coexisted in different regions of Russia. Thus, while in some regions the incumbents were fully dependent on Moscow, in others they remained relatively more autonomous.

While in many indicators of sub-national authoritarianism the focus is on purely internal political cleavages within the regions, this paper attempts to provide a set of proxies, which take into account not only these internal divisions, but also (potentially even more important) divisions caused by the relations with the federal center. One of the core theoretical concepts of the research on sub-national authoritarianism introduced by Gibson (2005) is the ‘boundary control’: the idea that the key task of any authoritarian regime in the province is defend oneself from possible interventions of the central government – for example, by eliminating regional actors with ties to the central politics, which could appeal to the central administration. However, the existing quantitative measures of the sub-national political regimes are typically taking merely the internal political processes into account and ignore the extent of the ‘boundary control’. In the operationalization of the sub-national political regimes used in this paper, we explicitly take this issue into account and base our typology of Russian regions on two variables (see also discussion in Vasilyeva and Nye 2015):

- First, we distinguish between regions run by governors, who initially came to power through regional elections (when they still existed), and regions, where the governors initially were appointed by the federal administration (‘old’ and ‘new’ governors). Note that in the first case the governors could have later been reappointed by the federal administration after elections were abolished: for us, the important distinction is whether the governor came to power through elections at the *beginning* of his rule in the regions.

New governors, on the contrary, have never been subject to any form of elections and were immediately appointed.

- Second, we look at the share of the UR in the regional legislature. Since most Russian regions during the period of investigation used a mixed voting system, with the regional parliament elected partly through the proportional voting for party lists and partly through single-member districts, we use two proxies for measuring the extent of competitiveness in the regional parliaments: (a) the share of seats UR won through party list elections and (b) the total share of seats UR won (party lists and single-member districts)

Essentially, we suggest to compare regions where the political environment seems to be driven by rivalry between the regional elite and the federal interventions (*fragmentation of elites*), with those where either the regional elite managed to keep control (certainly, pledging their loyalty to the federal center), or the federal elite established full control over region (*consolidation of elites*). More specifically, our attribution of regions to individual types is based on the following considerations (see also Table 1):

- The inter-elite rivalry is expected to be present if one observes a variation of the ‘divided government’: the executive and the legislature are controlled by different forces.¹² This happens in two cases. If the regional executive is under full control of the UR, but the region is still run by the ‘old’ governor (who originally came to power through elections), the latter is likely to be linked to the old regional elites, while the former can serve as a tool of control of the center.¹³ Similarly, if the governor is a ‘new’ one (originally appointed by the center and thus with much weaker legitimacy and much stronger dependence on Moscow), while the UR’s share in the parliament is small (i.e., multiple other parties, possibly associated with other elite groups are present there), the region should also be characterized by the fragmentation of elites.

¹² Certainly, the competition can be more complex, involving numerous power centers; our analysis therefore offers only a crude picture of the power balance in the regions.

¹³ For an example see the discussion of the conflict between the governor and the UR-controlled legislature in the region Ivanovo in Libman and Obydenkova 2014.

- On the contrary, the following combinations are likely to represent the cases of consolidated elites. First, if the region is run by the ‘old’ governor and the position of the UR in the regional parliament is weak (i.e., multiple factions of elites manage to be represented in the legislature), we expect the region to be fully under control of the regional elites. Though the power balance between those can be complex, the intensity of within-region political competition is unlikely to be as high as that of the rivalry between the regional elites and the federal center – regional elites had years to find an allocation of rents accommodating their interests, while the intervention of the federal center unfamiliar with this power balance poses a much bigger threat. Second, if the region is run by the ‘new’ governor and the UR has full control over the parliament, the region is fully controlled by the federal center, with regional elites offering little resistance.

In sum, given our hypothesis, we should observe the best performance in regions with new governors and high share of the UR in the regional parliament, as well as in regions with old governors and low share of the UR in the parliament. Regions ran by new governors with a small UR share in the regional parliament and regions ran by old governors with a large UR share should demonstrate poor performance.¹⁴

There is an important caveat we have to take into analysis. For the case of the new governor ruling the region, the interpretation of different power structures seems to be straightforward: high control of the UR is associated with elite consolidation, and lack of control with elite fragmentation. However, in case of the old governor remaining in power, alternative interpretations are possible. In some cases, old political machines were fully

¹⁴ One example is of the logic of our analysis is Amur oblast in the Far East. In 2001-2007, it was ruled by Leonid Korotkov, a local politician, who managed to establish a well-functioning political machine integrating the regional elites. In 2007, he was replaced by Nikolai Kolesov, an outsider, who has never worked in the region before, but had the backing of the federal presidential envoy to the Far East. The appointment of Kolesov triggered a year-long struggle with the regional elites and in particular with the regional parliament. At that moment, UR was not the dominant force in the legislature, which was controlled by the pro-Korotkov coalition ‘We Are for the Development of the Amur Oblast’. This struggle ended in 2008, with the new elections to the regional parliament, which allowed Kolesov to establish full control over it (with the UR becoming the leading political force). Thus, in line with our typology, Amur oblast went from a case of consolidated elites (old governor, low UR share) to a case of fragmented elites (new governor, low UR share), indeed characterized by the strong tensions in the elites, and then to a case of consolidated elites again (new governor, high UR share). Other regions show even more complex trajectories of regime transition.

integrated in the new federal hierarchy; thus, the old governors kept control over the ‘local’ branch of the UR, essentially composed of their old allies (Slider 2010). Then the case when the old governor coexists with the dominant UR in the regional assembly could refer to the preservation of the old political machines, but now under the new UR label. Nevertheless, we also have reasons to expect regions with well-established old governors and their control over regional UR branches to show a relatively poor performance in terms of managing natural resources, but for a different reason: these resource-rich regions are likely to be subjected to particularly strong pressure of the federal government. In the eyes of the federal center, access to rents could turn old governors into autonomous centers of power, what is clearly unacceptable for the federal administration. The center may decide not to risk firing the governor (fearing the loss of governability of the region), but still will constrain the access of the governor to resources, especially natural resource rents. Paradoxically, the more powerful the governor is in the region, the more concerned the center could become. The pressure of the federal center could become particularly damaging for the development of these regions.

4. Empirical strategy

Our paper applies the following empirical strategy. We construct a panel dataset of Russian regions for the period of 2004-2009. We select this period of study for two reasons. First, this is the period of extremely volatile oil prices, which fits the logic of our theoretical argument (see Figure 1). In particular, our timeframe covers multiple periods of price increases and of declines; thus, our effects cannot be driven merely by the fact that prices exhibited a systematic trend throughout the period of our investigation. Second this allows roughly capturing the era when the governors we designated ‘old’ and ‘new’ coexisted in Russia side by side, so that we can obtain sufficient variation in the explanatory variable of our study; after 2009, only few ‘old’ governors remained in office. The dataset covers the absolute majority of Russian regions: the only exceptions (rather standard in the extant literature using

Russian regional data) are Chechnya (for which, given the legacy of a decade-long conflict, no reliable data is available) and autonomous *okurgs* (subordinate territories, which at the same time belong to a different region). This gives us about 300 region-year observations, which is sufficient for the empirical analysis.

As the dependent variable, in the baseline regression we use the real growth of the regional GDP per capita in a particular year (this is appropriate since we are interested in the short-term effects of resources on growth). This variable is regressed on two quantitative proxies of regional political regimes (whether the region is controlled by the new or the old governor and the share of the UR in the regional parliament) and on the size of the oil rent (we use a natural logarithm of this variable to reduce the impact of outliers).¹⁵ If we estimate the regressions without interaction terms, we are able to find out the unconditional association between resource rents and economic growth (i.e., test whether resource rents in Russia harm or encourage growth in the short run). However, because we are interested in the conditional effect of the oil rent on the growth rates, in the main specification we interact the oil rent with both political variables (share of UR and dummy for old vs. new governors) as well as add an interaction term between the political variables themselves and the triple interaction term. By estimating this model, we are able to find out the difference in the effect of oil rent on growth depending on the level of elite consolidation vs. fragmentation (in line with our theoretical argument, driven by the additional volatility caused by the intensity of rent-seeking).

We compute the oil rent as the oil extraction in the region at the beginning of the period of investigation, i.e., in the year 2003, multiplied by the oil prices on the global market in the current year. It means that the oil rent varies over time only because of changes in the global oil price. This allows us to somewhat weaken the problem of endogeneity, which we have mentioned in the introduction: while the oil extraction can be determined by the

¹⁵ Note again that the ‘oil rent’ in this discussion does not necessarily refer to the part of the oil revenue appropriated by the regional population or the regional government: it can be taxed away by the federal administration or redistributed by the oil companies towards their headquarters typically located in Moscow or St. Petersburg (thus, Moscow is one of the leading energy exporters among Russian regions according to official statistics, see Mishura 2010). This issue will be discussed in what follows.

economic growth, it is safe to say that the global oil prices are exogenous in terms of the regional policies and no region of Russia has sufficient market power to actually influence it. We acknowledge that our solution to the problem of endogeneity is imperfect: in spite of using two-way fixed effects, we cannot entirely eliminate the existence of omitted confounders, which could drive our results (e.g., some unobserved governmental policies directed at supporting particular types of regions). Our approach allows us to deal with numerous sources of endogeneity though.

An important problem for our analysis could be the endogeneity of political regimes to growth. Specifically, it could occur through the following mechanism: regions with higher growth rates could attract rent-seeking coalitions at the federal level, which would intervene in the regional affairs (e.g., Sheng 2007; Dube and Vargas (2013) develop a similar argument suggesting that commodity price shocks increase the propensity of violent conflicts because of emergence of rents conflict parties try to appropriate). In this case, growth would lead to elite fragmentation, and not vice versa. However, we have reasons to believe that in our data this effect is absent. Our argument builds upon both conceptual and empirical considerations, as well as evidence from the literature.

To start with, the hypothetical mechanism of this paper implies that regions with fragmented elites should be characterized by lower growth rates. Stated otherwise, the correlation between elite fragmentation and growth is expected to be negative. The reverse causality mechanism presented above, however, suggests the opposite: high growth rates should be positively correlated with elite fragmentation (because high growth rates attract federal actors intervening in the regional affairs). Hence, if our findings corroborate our hypothesis, they are unlikely to be explained by reverse causality.

It is still possible, however, that we observe a positive correlation of elite consolidation and growth in the following scenario: in high-growth regions federal elites intervene and are highly successful in establishing control. Thus, these regions turn into

consolidated elites' cases very fast. However, we can also provide further arguments against reverse causality for each of the sub-characteristics of the regional politics (type of the governor and share of the UR).

- For the type of the governor, the following argument can be used: Since we apply the fixed-effects panel data approach, we use the within variation of political regimes in the regions of Russia for our estimations. A crucial factor influencing this within variation during the period of our investigation is the policy of appointment of regional governors by the federal center; new incumbents shape the changes in the regional political regimes. In the Russian case, the abundant research shows that these political changes are not linked to the economic performance of the region (or growth). Reuter and Robertson (2012) and Rochlitz et al. (2015), for instance, demonstrate that growth is entirely irrelevant for the appointment of the governors; and these appointments are, as mentioned, one of the key variables we use to identify the sub-national political regimes. But also the power of the old established governors is frequently independent of the economic performance and instead based on developed informal networks connecting the elites. Thus, the presence of an old or a new governor in the region should be independent on growth.
- For the share of the UR, the literature does not provide us with similar evidence, so that we use a simple econometric test. We construct a dataset of region-years containing all observations, where for a region i the share of UR changed in the year t (included in the dataset) as opposed to the year $t-1$. Stated otherwise, we include all observations, where a change in the share of UR (and hence, in the elite consolidation) occurred in the given year (practically, these are election years in the respective regional parliaments). If the reverse causality mechanism were valid, we would see a correlation between the UR share in the year t and the growth in the year $t-1$. However, in our data, no correlation is present (specifically, we regress the share of UR on the growth rate in the year $t-1$; we also run

specifications controlling for the share of UR in the year $t-1$, the share of seats allocated through party lists in the regional parliament, and GDP per capita). Hence, also for the share of the UR we do not see that the elite fragmentation is affected by the growth rates in the short run.

We have to point out, however, that the presented arguments are suggestive and thus we cannot fully exclude the possibility of reverse causality. However, we believe that these arguments make the reverse causality less plausible.

In order to perform the intended analysis, we need to observe sufficient variation across regions in terms of the political regimes. Figure 2a reports the distribution of our observations in terms of four combinations of old vs. new governors and high vs. low share of the ruling party in the parliaments in the total sample (301 observations; UR share is defined based on all mandates in the regional parliament; using the UR share definition based on party lists only produces identical results). One can see that the groups of autocracies with fragmented and with consolidated elites are almost comparable in size, and different types of regions are sufficiently present in our data. Figure 2b reports the same graph for regions with non-zero oil extraction (they account for about one-third of the observations in our data): we observe sufficient variation and a similar pattern of distribution of observations according to political regimes. This is important, because high correlation of resource rents and political regimes would render our analysis impossible: this is, however, not what we observe in the Russian data.¹⁶

The regressions we estimate include a large set of control variables allowing us to disentangle the effects of the variables we are interested in from other confounding factors. As

¹⁶ An interesting question is whether there is sufficient within-region variation of political regimes in our data. To analyze it, we construct a binary classification of regimes with consolidated and with fragmented elites: as the threshold we take the mean share of the UR in our data. If we look at transitions from the regimes with consolidated elites to that with fragmented elites and vice versa, over the period of our observations they occurred in 22 regions in our sample out of about 80 included in the dataset; thus, the changes are sufficiently frequent. Of the recorded transitions, 40% were from fragmented to consolidated elites and 60% from consolidated to fragmented elites. Roughly one third of all transitions happened in resource-rich regions (which corresponds to their share in the overall sample). Note that multiple regions experienced several transitions over the course of our observations. And there are even more changes if one looks at the continuous UR share variable rather than the binary regime proxy.

it is usual in growth regressions, we control for the GDP per capita to account for the size of the regional economy. Furthermore, we include a number of covariates capturing the characteristics of the regional governor: age and time in office (influencing the entrenchment in the regional context, as well as the rent-seeking appetites of the governor), a dummy for governors with business background (who could be characterized by different policy preferences and governance practices) and a dummy for outsiders (i.e., governors, who originally came from a region different from that they governed; this group could suffer from severe deficits of local knowledge and understanding of regional specifics negatively affecting their performance). Finally, since the specifics of electoral system could affect the composition of the parliament, we also control for the share of seats in the parliament allocated through party lists (Russian regions differ substantially in this respect). Note that numerous other regional characteristics (e.g., distance from Moscow or ethnic composition) are captured by region fixed effects; but, as discussed in what follows, we also experiment with including various additional variables in our regressions in the robustness checks. Furthermore, we use two-way fixed effects specifications to control for region-specific time-invariant and time-specific region-invariant unobservables.

The analysis of interaction terms is performed in the following way. First, we look at the significance and sign of the interaction terms. If the interaction terms are significant, political variables have an influence on how oil affects economic growth. However – especially for triple interaction terms – immediately interpreting the magnitude of the growth effect of resources for various types of regions is difficult. Therefore, second, for each specification, we also compute the marginal effects of oil rents on growth conditional on political regimes. More specifically, we calculate the marginal effects separately for old and for new governors and for minimal and the maximal shares of ruling party in the parliament. This allows us to single out the regime types for which growth effect of resources is stronger.

Marginal effects and the corresponding significance levels are computed using delta method.¹⁷

5. Results

5.1. Baseline results

Table 2 reports the results of the baseline specification of the model. The first column reports the results of regression of the economic growth on the oil rent. It shows the unconditional effect of resource abundance on economic performance. The second and the third columns report the results of regression of the economic growth on the political regime variables. The fourth and the fifth columns, finally, report specifications we are most interested in, which include the interaction terms between the political regime variables and the oil rents. Regressions (2) and (4), on the one hand, and (3) and (5), on the other, correspond to two different approaches we used to capture the extent of control of the UR over the regional parliament.

We obtain the following results. First, as the specification (1) shows, oil abundance has a negative effect on economic growth of the regions of Russia. Thus, our paper sides with the literature suggesting that resources have an adverse effect on growth in the short run. The effect could be driven by the volatility of oil prices (or by other mechanisms). Second, and more importantly for our analysis, in the specifications (4) and (5) the interaction terms in the model are highly significant, including the triple interaction term. This means that political regimes matter for how strong the effect of resources on growth is. In order to analyze the difference between regimes in greater detail, we look at marginal effects reported at the bottom of the table. The subsequent discussion focuses at the results obtained from specification (4) (specification (5) yields qualitatively similar outcomes).

¹⁷ While it became common practice in empirical studies to report marginal effects in interaction term models graphically, we refrain from it because with triple interaction terms graphs are extremely difficult to interpret: we, however, provide marginal effects for sufficiently many combinations of the interacted variables so that the reasonable interpretation of our results is possible.

To start with, the negative effect of resources on growth is relatively small (in absolute value) for regions run by new governors with a dominant role of the UR in the regional assembly (the marginal effect of the oil rent for these polities is minus 4.25). This is precisely the group of provinces with consolidated elites. Furthermore, since these regions are run by new governors appointed by the center and probably with better ties to the federal government, they also are likely to face the lowest pressure from the central administration. The same marginal effect (minus 4.25) is observed in another group of regions - those with an old governor and a small share of UR in the regional parliament. In regimes with fragmented elites the negative effect of the oil wealth is more pronounced. This applies to regions with a new governor and small UR share (minus 4.67) and to regions with an old governor and a large UR share (minus 5.28). As for the former, as mentioned, we interpret them as cases of power struggle between a new governor and the old regional elite, where the appointee of the center failed to consolidate his power basis; hence, it is not surprising that the negative effect is particularly strong. As for the latter, most likely, we observe a negative effect of the confrontation with the federal center – either direct (pressure of the center against the governors, who managed to keep control over their political machines) or indirectly (through the competition between the governor and the regional UR loyal to the federal center).

Summing up, we indeed find that in regimes with fragmented elites oil rents have a more pronounced negative impact on growth than in those with consolidated elites. Thus, our results are in line with the hypothesis formulated in section 2.1. Furthermore, specifications (2) and (3) show that, generally, regions with high share of the UR and a new governor have higher growth rates than those with high share of the UR and an old governor. Again, it indicates that regimes with fragmented elites perform worse than those with consolidated elites, even if they are resource-poor – in fact, rent-seeking should be damaging the economy of resource-poor regions as well.

5.2. Robustness checks and additional analyses

We augment our analysis by a number of robustness checks, which confirm the validity of our findings. To start with, in the Table 3 we re-estimate the baseline specification using an alternative approach. The disadvantage of running triple interaction terms is that we subscribe to a certain linear model of how political characteristics could co-influence each other as determinants of the effect of oil wealth on growth. Thus, we also estimate regressions, where we replace two proxies of the regional political regimes and their interactions by a set of dummies, which are then interacted with the oil rent variable. Specifically, we run several sets of regressions. First, we introduce a dummy for regimes with fragmented elites and interact it with the oil rent (to construct this dummy, we use the UR mean share as a cutoff value). Second, we introduce several dummies: for regions with a new governor and low share of UR in the regional parliament; old governor and high share of UR in the regional parliament; and old governor and low share of UR in the regional parliament (We assign regions into the group of ‘high’ vs. ‘low’ share of UR in the parliament depending on whether the share of the UR is below or above the average in Russia).¹⁸ In both cases, we also apply two approaches to defining the UR share (through the share in the party list elections and the share in the total number of seats). For the first type of specification, consolidated elites is treated as reference case; for the second type of specification, regions with the new governor and high share of UR in the regional parliament are treated as the reference case. Our findings are in line with the results of Table 2. If we look at the dummy for political regimes, in authoritarian regimes with fragmented elites negative effects of oil rents on growth are larger than in the reference case (consolidated elites). If we look at three dummies for different combinations of the governor type and the UR share, in regions run by old governors with a high share of UR in the regional parliaments (for both approaches of measuring the size of the UR), as well as for regions run by new governors with a low share of the UR in the parliament (if one measures

¹⁸ Separating the regions according to the median of the share of the UR in Russia yields essentially the same results.

the UR share through party lists), the oil rent has a stronger negative effect on growth than in the reference case.

We also use a number of further checks (which are not reported due to space constraints but can be made available at request). First, we augment the set of controls, by adding the provincial fixed capital investments. This variable has a potentially strong impact on economic growth; the disadvantage is, however, that it can also be determined by growth levels, causing the problem of endogenous controls (Frölich 2008). Our results remain robust however. We also experiment with including a set of further control variables in various combinations: population growth; share of people with university education in the labor force (in Russia, looking at the secondary education is not interesting, since the schooling coverage is close to universal); log crime rates per capita; number of doctors per capita (as a proxy for the quality for healthcare); share of agriculture in the GDP; share of service sector in the GDP; net exports; and trade turnover (exports plus imports). All of these variables have been shown to matter for economic growth (although the direction of causality is not necessarily clear; furthermore, quite a few of them should influence long-run growth rather than short-run effects we study in this paper); their inclusion, however, has no effect on our results.

Second, we estimate regressions excluding potential outlier regions. While, generally speaking, the region-specific time-invariant specificity should be captured by the fixed effects, this may not be enough to capture all possible influences of outliers on our regression results. In particular, we replicate the regressions excluding the following observations: (a) the cities of Moscow and St. Petersburg (both have traditionally played a special role in the economic structure of Russia because of their formal (Moscow) and informal (St. Petersburg) status of the ‘capital cities’ – for instance, many companies locate their HQs in these cities because of their high political status, which makes the GDP of these cities incomparable to the rest of Russia); (b) Tyumen (this region produces about 60% of the Russian oil extraction and thus could be an outlier) and (c) Sakhalin (this region has been a center of several major

offshore drilling projects developed in the 2000s). Our results remain robust. We also use a formal approach to isolate the set of outliers, looking at the Cook's distance: but there are no regions with the Cook's distance exceeding one in our sample.

Third, instead of using the share of the UR in the parliament, we look at the political fragmentation of the regional parliament measured by the Herfindahl-Hirschman index. This allows us to capture the multiplicity of groups (i.e., according to our interpretation, of elite factions) present in the legislature. The results remain robust.

6. Discussion

Our paper finds evidence that the elite fragmentation in authoritarian regimes leads to worse results in terms of growth effects of the resource rent in the short run. While the results are robust to a variety of additional checks, they still leave an important question unanswered. Since we look at the sub-national level, we need to discuss which policies implemented by sub-national governments are able to affect growth in their regions. Stated otherwise, what policy variables at the regional level are affected by the intensified fight for rents that produce the negative effect we observe in our regressions? Hypothetically, the effect can be linked to fiscal policy (budget expenditures and taxation, which obviously could become a target for fights over rents) and/or regulatory policy (including intensity of monitoring and audit of private business).¹⁹ Regulatory policy can in turn target both resource and non-resource sector. In case of resource sector, regulation affects the allocation of rents, as well as the incentives to extract resources. For non-resource sector, regulatory decisions influence the ability of companies to profit from possible spillovers from the resource sector. Revenue generated in the resource sector hypothetically can lead to higher revenues in some of the non-resource sectors (e.g., high salaries payed to employees of the resource sector boost activity of the service sector). But intensified rent-seeking by rivaling elite factions could

¹⁹ Libman (2017) shows that there are significant differences in the regulatory policy across Russian regions depending on the extent of elite fragmentation vs. consolidation.

result in unstable and predatory regulation, which reduces or even nullifies these positive effects (Libman 2013b).

What policy tools matter in the Russian case? In the 2000s, Russian regions experienced a gradual decrease of the extent of their authority in fiscal matters (de Silva et al 2009). Most importantly, the resource revenue, which originally was allocated to a large extent to the regional budgets, was redistributed towards the federal center, as it is convincingly discussed in Alexeev and Chernyavskiy (2014, 2015).²⁰ Furthermore, regions have almost no autonomy in determining their tax policy – the tax rates and bases are set by the federal center, which also collects taxes, even if they are attributed to the regional budget. While in general taxation of oil and gas extraction is an important source of budgetary revenue for the Russian state, it is mostly benefiting the federal level. The regions still benefit from the oil extraction, but only indirectly (e.g., through their components in the personal income tax and the corporate profits tax, which have a tax base influenced by resource abundance). And in general, regional budgets in Russia play a subordinate role to the federal budget, and we do not expect the budgetary revenues and expenditures channel to play the most important role in explaining our results.

From this point of view, it is reasonable to assume that the effects we observe in this study are not driven by the budgetary policy regions implement. To test this, we estimate two types of specifications. On the one hand, we study whether the structure of the governmental expenditures is affected by the size of the oil rent, i.e., we can still check whether resource abundance causes regional government to re-focus its spending on certain types of budgetary items.²¹ On the other hand, we replace the oil rent as defined above by the budgetary revenues

²⁰ Note, however, that even in case the rent is appropriated by the center, the position of the actor controlling the *generation* of the rent could be attractive and subject to conflicts. For example, a regional governor, who controls a resource rich region, could hypothetically influence whether oil extraction functions smoothly, whether there are strikes or protests, whether the infrastructure is in good conditions etc. As such, the governor will gain some bargaining power vis-à-vis Moscow. Thus, the position will become attractive for rent-seeking groups – both regional and federal ones.

²¹ We study, in particular, how the resource rents affect the growth rates of the share of expenditures of the regional budget on the *government* (resources spent for the functioning of the regional administration) and the

from oil (share of mineral tax in the regional budget; mineral tax – *nalog na dobychu poleznykh iskopaemykh*, *NDPI* – is the major form of taxation of oil, computed based on the estimated value of extracted natural resources) and replicate our baseline specifications. In this case, we directly check whether growth effects are driven by the portion of resource rents received by the regional government or through other effects resource rents have in the region (e.g., spending of employees of resource companies etc.). Both analyses (Tables 4 and 5 respectively) yield unambiguous results. First, the structure of expenditures in the regions are not driven by the resource rents. Replacing resource rents by the share budgetary revenues from the mineral tax, we find that the effects, while generally speaking in line with those reported in Table 2, are weaker and less significant.

How can we then explain the highly robust results we reported in the previous section? We argue that the effect is linked to two mechanisms. First, while the regional *budgets* receive very little from the oil and gas rent generated in the province, many Russian regional governors entertain a developed network of de-jure independent foundations, which are de-facto closely linked to the governor or elite members (e.g., run by the members of their family) and which regional business is forced to make contributions to. These contributions are from the legal point of view voluntary, but the non-compliant companies face severe pressure from the regional government. Precisely these pseudo-voluntary funds are one of the key tools of rent-seeking at the sub-national level in Russia.

In Kemerovo Oblast (Western Siberia), for example, the first fund of this type can be traced back to 1999, when the region created a ‘reserve fund’ supposedly filled through voluntarily contributions: however, the governor openly assembled the heads of the 400 regional companies and insisted on them making contributions (of about 2-4% of their total

national economy (subsidies to businesses, support of regional enterprises etc.). Both types appear to be particularly prone to rent-seeking: while spending for the government, obviously, can be appropriated by bureaucrats, national economy spending is the main target of lobby groups (e.g., industrial lobbies). We also look at the growth rates of share of expenditures for both national economy and government.

expenditures for the wages and salaries) of the monthly basis.²² The system persisted in spite of the centralization trends of the 2000s: by 2017, for example, it was not unusual for the regional governor to openly request the business to ‘voluntarily’ donate for public infrastructure or individual events like festivities. Governor Tuleev (in office in 1997-2018) admitted quite publicly that “initially some resisted, but later they came, and we started to talk. I tell them: ‘if you want to work without any problems, let us make a deal’” [translated by the authors]²³ A system of quasi-voluntary funds focusing on agriculture was established in the Belgorod oblast (where it became subject of investigation of the federal antitrust in 2015).²⁴ In the Amur oblast, in 2008, the regional government requested the firms to make fixed contributions of 1% of their turnover to the Housing Fund created by the governor in exchange for quotas for migrant workers.²⁵ In short, even if the centralized taxation manages to take away the rents, which would otherwise be appropriated by the regional *budget*, governors still have plenty of tools to de-facto impose additional taxation on business through *informal institutions*. The informality should be particularly conducive to rent-seeking, which should make the mechanisms described in section 2 particularly important.

Second, in spite of the fiscal centralization, there are still large differences in the *implementation* of regulation (including the federal one) and some differences in the content of regulation across the regions of Russia. Principal-agent problems limit the federal government’s ability to monitor the regional bureaucracies (Yakovlev and Zhuravskaya 2013; Kuzmina et al. 2014; Karas et al. 2015). For example, the practices of the regional courts in implementing the same federal law are not uniform across the regions of Russia (Kluge and Libman 2017), as are the practices of controlling agencies and administrations (Gimpelson et al. 2010). As a result, the burden faced by companies in some regions is much larger than in others (World Bank 2012). The sub-national corruption rates in Russia differ a lot, depending

²² <https://www.kommersant.ru/doc/218703>, accessed 26 October 2017

²³ <https://meduza.io/feature/2017/07/24/u-vas-tut-sovetskiy-soyuz-kakoy-to>, accessed 26 October 2017

²⁴ <http://www.interfax.ru/russia/480984>, accessed 26 October 2017

²⁵ <http://expert.ru/2008/05/22/kolesov/>, accessed 26 October 2017

on the modes of regional governance (Kisunko and Knack 2014). This variation is likely to reflect themselves in the sub-national growth rates (Leonard et al. 2016). While the oil and gas sector is primarily regulated by the federal administration (since it is mostly represented by large multi-regional corporations, frequently state-owned), the non-resource sector attracts much less federal attention. Thus, it appears to be more plausible that the regulatory variation at the sub-national level targets primarily the non-resource sector (Libman 2013a).

Summing up, in spite of the high centralization of the Russian fiscal system, and especially of resource taxation, we expect the sub-national politics to matter for how the resource revenue affects the regional growth: both because of existence of de-facto informal taxation (through demands to the regional business to contribute to the funds and charities close to the governor) and because of variation in the law enforcement, particularly concerning the non-resource sector. While these mechanisms are difficult to account for statistically (due to their purely informal nature), they are highly important for understanding the effects we observe in this study.

7. Conclusion

It remains to summarize the main results of our analysis. The paper addresses the effects of politics on the extent to which resource-rich societies benefit or suffer from the resource abundance in the short run. Our theoretical mechanism suggests that because of high volatility of commodity prices, resource dependence could result in suboptimal decision-making by private and public actors, leading to short-term growth reduction. But in addition to that, inflow of resources intensifies fights for rents. While the previous research focused on the distinction between autocracies and democracies, our main attention is on the difference between different types of authoritarian. Particularly, we compare regimes with fragmented elites to that with consolidated elites. We argue that fragmentation of elites increases the intensity of fights for rents (because of high uncertainty faced by different elite factions

concerning their long-term status), which should create an additional source of economic volatility harming growth.

We test this conjecture using sub-national data. While there exists a rich literature on sub-national political regimes, most attempts to measure them focus at the within-region political pluralism and competition. We argue, however, that a crucial factor for the extent of competition of elites in the region is the way the federal government intervenes in regional affairs. In Russia, for instance, the federal government used different strategies for appointing regional governors; while the nation-wide ruling party UR had different levels of control over legislatures. These differences had an effect on the extent of elite rivalry in the regions of Russia – either reducing it in some (because of the predominant role of the regional elites or of the federal appointees) or intensifying it in others.

The analysis of the Russian regions shows that the variation of authoritarian regimes indeed has an effect on how natural resources impact economic growth. We find evidence that the oil rent has a negative effect on growth, but it is weaker in regimes with consolidated elites. We rely on the exogenous change in the oil prices for our identification strategy and find our results to be robust under a variety of alternative tests. The results are particularly interesting because they have been established for the Russian Federation – a country, which, since early 2000s, has experienced a strong recentralization trend and where regional budget receive a small share of the mineral sector taxation – most of it is appropriated by the federal budget. We suggest that the effects could be explained by two additional mechanisms: the presence of a system of informal payments de-facto operating as additional tax burden for private companies in favor of the regional elites, and the fact that regions in Russia, due to principal-agent problems, still have a lot of discretion in implementing the legal norms – in particular, changing the conditions of doing business in the non-resource sector, which could preclude resource revenues from creating positive spillover effects onto other sectors.

The study acknowledges its limitations. It offers a study of a single (although large and heterogeneous) country and focuses on a single (although highly important) resource. It investigates a period when different types of autocracies coexisted in Russian regions – but this period itself could be driven by idiosyncratic factors (the transition from a hybrid regime to a consolidated autocracy Russia at the national level experienced under Putin). Furthermore, we acknowledge that the solution to the problem of endogeneity we offered in our study is imperfect. Since we do not use a natural or field experiment design, we cannot fully eliminate the impact of unobserved confounders potentially biasing our results. However, even if treated as correlations, the results of this study provide novel evidence of systematic variation in the resource growth effect across different types of authoritarian regimes, which, to our knowledge, was not present in the literature before. Thus, we hope that our study could instigate further research on the effects of heterogeneous authoritarian regimes in resource-rich polities.

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Table 1: Regional regimes in Russia

	High control of UR over regional parliament	Low control of UR over regional parliament
Old governor	Fragmented elites (with a caveat)	Consolidated elites
New governor	Consolidated elites	Fragmented elites

Table 2: Baseline regressions, dep. var.: GDP growth in region i in year t, 2004-2009

VARIABLES	Growth rate				
	(1)	(2) Seats for party list	(3) Seats totally	(4) Seats for party list	(5) Seats totally
New Governor	-	-2.31 (2.42)	-3.09 (2.44)	0.83 (1.64)	0.51 (1.61)
Share of the Ruling Party	-	-9.97* (5.33)	-8.73** (3.54)	-4.33 (5.05)	-3.70 (2.98)
(New Governor) x (Share of the Ruling Party)	-	8.81* (4.31)	10.12** (4.23)	1.31 (3.53)	1.77 (3.04)
Oil Rent	-5.09** (2.08)	-	-	-4.03* (2.10)	-3.71* (2.05)
(New Governor) x (Oil Rent)	-	-	-	-0.73* (0.39)	-0.81*** (0.29)
(Share of the Ruling Party) x (Oil Rent)	-	-	-	-1.32 (1.00)	-1.13* (0.59)
(New Governor) x (Share of the Ruling Party) x (Oil Rent)	-	-	-	1.86** (0.93)	2.06*** (0.76)
GDP per capita	28.24*** (3.57)	27.33*** (3.41)	25.90*** (3.64)	29.68*** (3.44)	29.36*** (3.76)
Share of seats for party lists	-0.03 (8.92)	-1.10 (8.14)	-0.46 (7.37)	-1.07 (7.64)	0.15 (6.51)
Businessman governor	-1.75 (1.97)	-2.88 (2.42)	-2.39 (2.11)	-2.84 (1.88)	-2.72 (1.73)
Time in office	-0.28** (0.13)	-0.23 (0.18)	-0.19 (0.18)	-0.26 (0.16)	-0.26* (0.15)
Outsider governor	-2.66** (1.12)	-3.01** (1.26)	-3.09** (1.19)	-3.52*** (1.06)	-3.82*** (1.06)
Age of governor	0.11 (0.08)	0.20** (0.10)	0.20** (0.09)	0.17** (0.08)	0.19** (0.08)
Constant	-188.60*** (38.76)	-196.67*** (35.90)	-182.48*** (39.44)	-205.90*** (37.41)	-206.07*** (41.25)
Observations	301	301	301	301	301
R-squared	0.75	0.75	0.76	0.76	0.77
Number of region	78	78	78	78	78
Region FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Within R-squared reported

Marginal effects of oil rent on growth rates

	Growth rates	
	(4)	(5)
Old Governor with Min Share of the Ruling Party	-4.25** (2.05)	-3.91* (2.02)
Old Governor with Max Share of the Ruling Party	-5.28*** (2.00)	-4.80*** (1.97)
New Governor with Min Share of the Ruling Party	-4.67** (2.13)	-4.35** (2.06)
New Governor with Max Share of the Ruling Party	-4.25** (1.87)	-3.62** (1.86)

Table 3: Alternative specification, dummies for regions with different regime type, dep. var.: GDP growth in region i in year t, 2004-2009

VARIABLES	Growth rates			
	(1) Seats for party list	(2) Seats totally	(3) Seats for party list	(4) Seats totally
Dummy Fragmented Elites	-0.10 (0.73)	-1.01 (0.65)		
Oil Rent	-3.99** (1.94)	-3.81** (1.92)	-3.84** (1.93)	-3.76* (1.93)
Dummy Fragmented Elites x Oil Rent	-0.38*** (0.14)	-0.29** (0.13)		
Dummy for Regions with Old Governors and Low Share of the Ruling Party			-0.37 (1.94)	-0.41 (2.07)
Dummy for Regions with New Governors and Low Share of the Ruling Party			1.21 (1.42)	0.15 (1.41)
Dummy for Regions with Old Governors and High Share of the Ruling Party			-1.58 (1.90)	-2.30 (1.48)
(Dummy for Regions with Old Governors and Low Share of the Ruling Party)x(Oil Rent)			-0.19 (0.35)	-0.14 (0.35)
(Dummy for Regions with New Governors and Low Share of the Ruling Party)x(Oil Rent)			-0.50* (0.28)	-0.36 (0.27)
(Dummy for Regions with Old Governors and High Share of the Ruling Party)x(Oil Rent)			-0.60* (0.31)	-0.48* (0.28)
GDP per capita	29.51*** (3.49)	29.00*** (3.60)	26.37*** (3.51)	28.00*** (3.60)
Share of seats for party lists	-0.09 (8.19)	-0.42 (8.04)	0.51 (7.71)	0.02 (7.57)
Businessman governor	-2.25 (2.00)	-1.61 (1.81)	-2.49 (1.53)	-2.14 (1.53)
Time in office	-0.29** (0.16)	-0.33** (0.16)	-0.18 (0.18)	-0.26 (0.16)
Outsider governor	-3.04** (1.40)	-2.95** (1.33)	-3.66*** (0.95)	-3.68*** (0.99)
Age of governor	0.06 (0.09)	0.13 (0.09)	0.08 (0.08)	0.18** (0.08)
Constant	-203.28*** (36.90)	-201.85 (38.81)	-170.64*** (39.19)	-192.60*** (39.57)
Observations	301	301	301	301
R-squared	0.76	0.76	0.76	0.76
Number of region	78	78	78	78
Region FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Within R-squared reported

Marginal effects of oil rent on growth rates

	Growth rates			
	(1)	(2)	(3)	(4)
Fragmented Elites	-4.10** (1.93)	-4.37** (1.96)		
Consolidated Elites	-3.81** (1.92)	-3.99** (1.94)		
New Governors and High Share of the Ruling Party			-3.76* (1.93)	-3.84** (1.93)
Old Governors and Low Share of the Ruling Party			-3.90** (1.95)	-4.03** (1.94)
New Governors and Low Share of the Ruling Party			-4.12** (1.98)	-4.34** (1.98)
Old Governors and High Share of the Ruling Party			-4.24** (1.91)	-4.44** (1.94)

Table 4: Government spending, oil and political regimes, dep. var.: growth rates of the shares of spending on particular types of budgetary issues in region i in year t, 2004-2009

A. Share of the ruling party as defined through the total number of seats

VARIABLES	Growth Rates for Share of Spending on		
	(1) Government	(2) National Economy	(3) Government+ National Economy
New Governor	0.02 (0.08)	0.12 (0.30)	0.16 (0.12)
Share of the Ruling Party	-0.01 (0.10)	-0.41 (0.43)	-0.14 (0.17)
(New Governor) x (Share of the Ruling Party)	-0.22 (0.17)	-0.01 (0.47)	-0.25 (0.19)
Oil Rent	-0.03 (0.08)	0.12 (0.13)	0.05 (0.07)
(New Governor) x (Oil Rent)	-0.03** (0.01)	-0.05 (0.03)	-0.05*** (0.02)
(Share of the Ruling Party) x (Oil Rent)	-0.02** (0.01)	0.03 (0.06)	-0.00 (0.03)
(New Governor) x (Share of the Ruling Party) x (Oil Rent)	0.08*** (0.02)	0.08 (0.07)	0.09*** (0.03)
GDP per capita	-0.06 (0.10)	0.33 (0.22)	0.17 (0.12)
Share of seats for party lists	0.18 (0.17)	-0.48 (0.30)	-0.17 (0.21)
Businessman governor	-0.00 (0.06)	-0.03 (0.06)	-0.03 (0.06)
Time in office	-0.01** (0.01)	-0.02 (0.03)	-0.01 (0.01)
Outsider governor	-0.07 (0.08)	-0.20 (0.12)	-0.12** (0.05)
Age of governor	-0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
Constant	1.91* (1.1.)	-3.06 (2.51)	-1.00 (1.43)
Observations	290	290	290
R-squared	0.21	0.32	0.28
Number of Regions	78	78	78
Region FE	YES	YES	YES
Year FE	YES	YES	YES

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Within R-squared reported

Marginal effects of oil rent on public expenditures

	Growth rates for Share of Spending on		
	(1) Government	(2) National Economy	(3) Government+ National Economy
Old Governor with Min Share of the Ruling Party	-0.04 (0.08)	0.12 (0.13)	0.05 (0.07)
Old Governor with Max Share of the Ruling Party	-0.06 (0.08)	0.14 (0.15)	0.05 (0.09)
New Governor with Min Share of the Ruling Party	-0.05 (0.08)	0.09 (0.14)	0.02 (0.08)
New Governor with Max Share of the Ruling Party	-0.01 (0.08)	0.17 (0.14)	0.09 (0.08)

B. Share of the ruling party as defined through the party list elections outcomes

VARIABLES	Growth Rates for Share of Spending on		
	(1) Government	(2) National Economy	(3) Government+ National Economy
New Governor	-0.05 (0.09)	0.08 (0.26)	0.10 (0.10)
Share of the Ruling Party	-0.02 (0.19)	-0.95* (0.54)	-0.37 (0.20)
(New Governor) x (Share of the Ruling Party)	-0.10 (0.20)	0.11 (0.42)	-0.14 (0.16)
Oil Rent	-0.04 (0.09)	0.07 (0.13)	0.03 (0.09)
(New Governor) x (Oil Rent)	-0.02** (0.01)	-0.04 (0.03)	-0.04** (0.02)
(Share of the Ruling Party) x (Oil Rent)	-0.02 (0.03)	0.08 (0.10)	0.02 (0.05)
(New Governor) x (Share of the Ruling Party) x (Oil Rent)	0.07*** (0.03)	0.05 (0.07)	0.07** (0.05)
GDP per capita	-0.07 (0.10)	0.37* (0.22)	0.17 (0.12)
Share of seats for party lists	0.14 (0.19)	-0.38 (0.26)	-0.14 (0.20)
Businessman governor	-0.01 (0.08)	-0.07 (0.17)	-0.04 (0.08)
Time in office	-0.01** (0.01)	-0.02 (0.03)	-0.01 (0.01)
Outsider governor	-0.07 (0.08)	-0.19 (0.13)	-0.11** (0.05)
Age of governor	-0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
Constant	2.10* (1.09)	-3.24 (2.42)	-0.89 (1.36)
Observations	290	290	290
R-squared	0.11	0.34	0.29
Number of Regions	78	78	78
Region FE	YES	YES	YES
Year FE	YES	YES	YES

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Within R-squared reported

Marginal effects of oil rent on public expenditures

	Growth rates for Share of Spending on		
	(1) Government	(2) National Economy	(3) Government+ National Economy
Old Governor with Min Share of the Ruling Party	-0.04 (0.08)	0.08 (0.13)	0.03 (0.07)
Old Governor with Max Share of the Ruling Party	-0.06 (0.08)	0.15 (0.16)	0.05 (0.09)
New Governor with Min Share of the Ruling Party	-0.06 (0.08)	0.05 (0.14)	0.01 (0.08)
New Governor with Max Share of the Ruling Party	-0.02 (0.09)	0.15 (0.14)	0.08 (0.08)

Table 5: Mineral tax share, growth and political regimes, dep. var.: GDP growth in region i in year t, 2004-2009

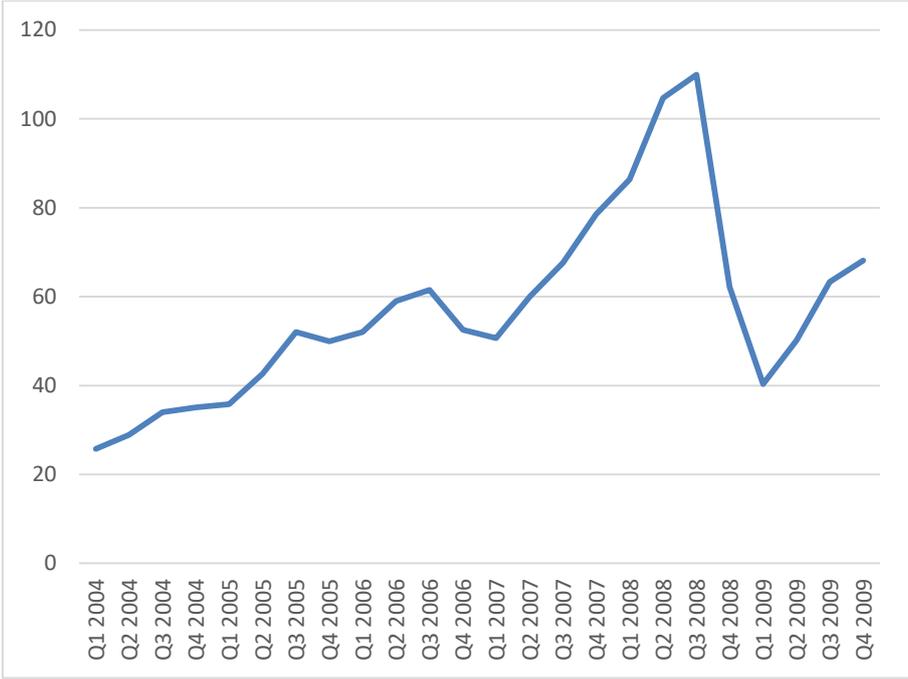
VARIABLES	Growth rate	
	(1) Seats for party list	(2) Seats totally
New Governor	0.81 (2.26)	1.33 (2.86)
Share of the Ruling Party	-8.67 (5.47)	-6.27 (3.69)
(New Governor) x (Share of the Ruling Party)	3.36 (4.35)	1.93 (5.22)
Share of Mineral Taxes	1.11 (8.33)	13.14 (11.13)
(New Governor) x (Share of Mineral Taxes)	-65.27 (41.79)	-72.24** (34.61)
(Share of the Ruling Party) x (Share of Mineral Taxes)	-5.40 (14.10)	-25.32 (17.33)
(New Governor) x (Share of the Ruling Party) x (Share of Mineral Taxes)	106.22 (43.23)	123.13* (66.07)
GDP per capita	28.47*** (3.88)	28.09*** (4.45)
Share of seats for party lists	-1.56 (8.26)	-0.36 (7.44)
Businessman governor	-3.66 (2.66)	-3.37 (2.36)
Time in office	-0.27 (0.19)	-0.24 (0.18)
Outsider governor	-3.27** (1.30)	-3.31*** (1.22)
Age of governor	0.24** (0.10)	0.22** (0.09)
Constant	-210.37*** (41.31)	-207.95*** (48.38)
Observations	301	301
R-squared	0.76	0.76
Number of regionl	78	78
Region FE	YES	YES
Year FE	YES	YES

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Within R-squared reported

Marginal effects of mineral taxes share on growth rates

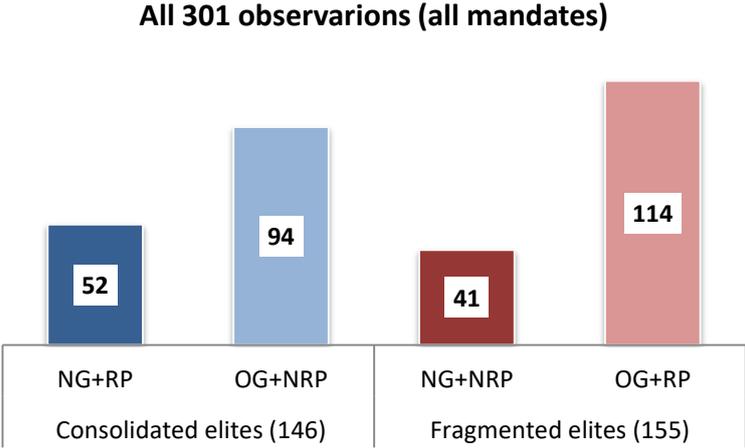
	Growth rates	
	(1)	(2)
Old Governor with Min Share of the Ruling Party	0.21 (6.13)	8.61 (8.11)
Old Governor with Max Share of the Ruling Party	-3.99 (5.96)	-11.47* (6.35)
New Governor with Min Share of the Ruling Party	-47.32 (34.72)	-41.59 (31.06)
New Governor with Max Share of the Ruling Party	31.01 (38.23)	36.00 (39.40)

Figure 1: Export prices of Russian oil, 2004-2009, USD per barrel

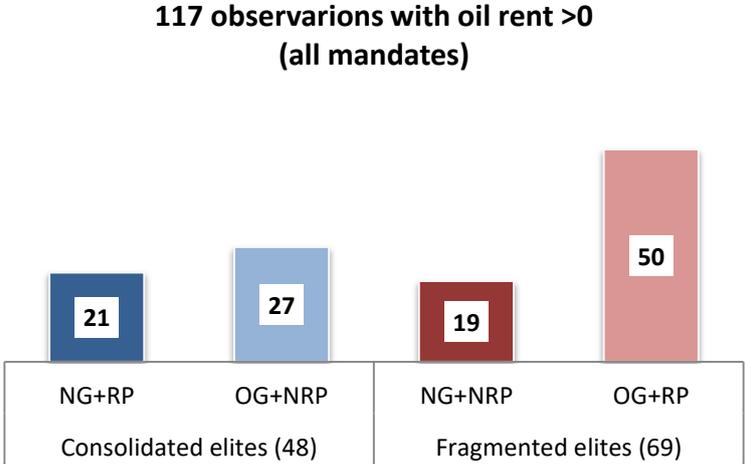


Source: Central Bank of the Russian Federation

Figure 2: Distribution of observations in our sample according to political regimes



(a) Full sample



(b) Oil-rich regions

Note: NG = New governor; OG = old governor; RP = high share of ruling party; NRP = low share of ruling party (determined according to the mean share of ruling party).

Appendix

A1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP growth rates	301	103.87	7.03	80.4	126.3
New governor	301	0.21	0.41	0	1
Share of seats for the ruling party	301	0.53	0.20	0.18	0.97
Share of seats for the ruling party in the party lists elections	301	0.52	0.17	0.17	0.94
Share of seats for party lists in the regional parliament	301	0.53	0.11	0.5	1
GDP per capita	301	11.42	0.59	9.55	13.35
Businessman governor	301	0.78	0.41	0	1
Time in office	301	7.42	5.14	1	20
Outsider governor	301	0.26	0.44	0	1
Age	301	54.40	8.08	34	75
Oil rent	301	4.10	5.50	0	17.14

A2: Description of variables

Name of the variable	Definition	Source
Growth rates	GDP annual growth rate	Rosstat
New governor	Dummy for governors, who have initially been appointed by the federal government and thus never underwent regional elections to take the office	Data are collected by authors from open sources
Share of seats for the ruling party	Share of seats of UR in the total number of seats in the regional assembly	Central Electoral Commission of the Russian Federation
Share of seats for ruling party in the party list elections	Share of seats of UR in the number of seats in the regional assembly allocated according to party list elections	Central Electoral Commission of the Russian Federation
Share of seats for the party lists in the regional parliament	Share of members of the regional assembly elected using proportional voting system	Central Electoral Commission of the Russian Federation
GDP per capita	Log GDP per capita, RUB	Rosstat
Businessman governor	Dummy for governors, who, prior to accepting public office, worked as entrepreneurs or high-ranked managers	Data are collected by authors from open sources
Time in office	Duration of the tenure of the governor in years	Data are collected by authors from open sources
Outsider governor	Dummy for governors, who did not reside in the region they govern prior to appointment	Data are collected by authors from open sources
Age	Age of the regional governor in years	Data are collected by authors from open sources
Oil rent	Log (1+ (oil price in year t) x (oil extraction in 2003 in region i in thousands of tons))	Annual oil prices from http://www.indexmundi.com ; Oil extraction in 2003 in Russian regions from Rosstat

Note: Rosstat = Russian governmental statistical agency.