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LAND, VOTES, AND VIOLENCE: POLITICAL EFFECTS OF THE INSECURE PROPERTY RIGHTS OVER LAND IN DAGESTAN

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How do insecure property rights over land affect electoral competition and the level of violence? To answer this question, I explore original empirical evidence from Dagestan, Russia's most turbulent North Caucasian republic. The exploration is based on a statistical analysis of district-level data with special emphasis on chronological validity. Studying the relationship between land titles of the Soviet period and post-Soviet amounts of tenured land, the research demonstrates that the amount of unregistered land in each district has a profound effect on local electoral competition and indices of violence. A higher percentage of untenured land at the district level leads to less electoral competition and more intense violence. Consequently, the study finds that the insecurity of property rights creates an opportunity structure for electoral patronage and violent expression of conflicts and grievances. In theoretical perspective this study sheds light upon a relatively unexplored institutional factor that drives electoral process and violence in predominantly agrarian societies.

Keywords: Dagestan, insecure property rights, electoral competition, level of violence.

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Introduction

What are the political effects of insecure property rights over land? How does it affect electoral competition and the level of violence? To answer these questions, I study explores original empirical evidence from Dagestan, Russia's most turbulent North Caucasian republic.

The motivation behind the research is driven by the existence of two possible causal links between land, power and violence. On the one hand, the insecurity of property rights may ultimately lead to violence and intense political competition, while increasing uncertainty over distribution of the most valuable resource and therefore raising the stakes of "the game". Moreover, the effect is likely to be enforced by grievances from poverty, inequality, and unemployment, which are associated with restricted access to land. On the other hand, a system of "fragile" land rights may empower incumbents and allow them to diminish electoral competition and violence through patronage.

The major methodological problem of studying the economic and political effects of security or insecurity of property rights is the measurement of the explanatory variable. Despite their formal nature, property rights are often imperceptible and difficult to capture by standard instruments of social science research. That is why most major works on the impact of property rights protection are either based on narratives (North, 1981; de Soto 1989), or on the analysis of indirect measures, such as expert evaluations of the risk of expropriation (Knack and Keefer, 1997; Acemoglu, Johnson and Robinson, 2001). Another crucial methodological problem in studying political effects of property rights over land is endogeneity, i.e. the difficulty of determining the direction of causality, which arises because property rights regimes and land policies are embedded in a political system. This study overcomes these problems with a special research design based on the chronological sequence of the causal effects.

Substantively, the research aims to explain two dependent variables: electoral competition and violence. The relevance of such a research design is highlighted by growing interest in the interrelationships between "bullets" and "ballots." In the introduction to a special issue on violent conflicts and electoral politics in *The Journal of Conflict Resolution*, Thad Dunning (2011) stresses that violence and electoral politics can act as substitutes or complements. They act as strategic substitutes when politicians use violence to obtain power and as strategic complements when politicians use violence to increase the probability of winning elections or use electoral results to inform the organization of violence. However, despite recent scholarly achievements in the topic, the interrelationships between violence and electoral politics are relatively unexplored from the perspective of institutions such as property rights over land.

In the North Caucasus, the land problem came to be of critical concern after the collapse of the Soviet Union. Facing severe land shortages, a high level of demand, and the complicated social, ethnic and legal structure of the North Caucasus, in the early 1990s the Russian government enacted a moratorium on land privatization.[3] As a result, in the last twenty years the region has developed different forms of *de facto* private property rights. The most common form of land ownership is long-term tenure, which lasts for 49 years. However, considerable amounts of land have not yet been registered. These are used and redistributed arbitrarily by local authorities. This creates analytically invaluable variation between secure and insecure ownership of land that allows testing the effects of private property rights protection. I exploit this variance, studying the disparity between land titles of the Soviet period and post-Soviet tenured land. As a result, I find that the level of redistribution and the presence of unregistered land decrease electoral competition and at the same time increase indices of violence on the district level. Furthermore, analysis of the data show that electoral competitiveness is determined by inequality of land holdings, and the level of violence depends on migration that promotes additional pressure over land and provokes the so-called "sons of the soil" conflicts.

This research opens a broad comparative perspective. The interrelationship between property rights over land, electoral competition, and violence is one of the most important problems in understanding political dynamics in the vast majority of countries which constitute the so-called "developing world". I argue that the more analytically useful and accurate concept for these countries is a "weak state" (Migdal, 1988), which highlights the incapacity of a government to enforce legal rules and eliminate violence, pervasive corruption, and capture of administrative, legislative, and judicial systems by particularistic interest groups. These features determine the principal role of patronage and superiority of local politics over national politics. In this light, the research strategy on studying the subnational and even sub-subnational evidence could lead to deeper understanding of the problem.

The structure of the paper is as follows. The next section provides a review of the related literature. Section 3 introduces a social context of the Republic of Dagestan. A presentation of the main theoretical predictions and the hypothesis of the research follows in Section 4, and I emphasize the relevance of the problem with several case studies in Section 5. Section 6 conducts an empirical analysis with special emphasis on research design, core variables, data, methods, and results and their interpretation. The paper concludes with a discussion of theoretical and practical implications of the results.

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[3] The Land Code of Russian Federation came into effect in 2001. Before this date, land relations in post-Soviet Russia were ambiguous.

Related Literature

The crucial role of property rights in economic development was originally expounded by Douglas North. North (1981) and other economists who have laid the basis for the conception of a liberal property rights regime (Demsetz, 1967; Alchian, Demsetz, 1973) have shown that security of private property stimulates growth and well-being, increasing production and investment by mitigating uncertainty and risk of expropriation. Further comprehensive empirical analysis has proved these theoretical assumptions (Besley, 1995; Knack and Keefer, 1995; Acemoglu, Johnson and Robinson, 2001).

Hence, while the positive impact of property rights on economic development is well established, political outcomes of property rights protection are relatively unexplored and contentious. North and Weingast (1989) presented the key argument on the problem. In their research on the evolution of constitutional arrangement in 17th century England, North and Weingast connected the creation of limited government with the elite's demand for property rights protection. The cornerstone of this influential article is that new political institutions allowed the government to create credible commitments to upholding property rights.

Hernando de Soto (1989) has confirmed the logic of interdependence of politics and the economy in reference to a particular case study. Employing many sources, he has shown that poverty, stagnation, and lawlessness in his native Peru was rooted in the country's inchoate system of property rights law and, particularly, property rights over land. De Soto's book *The Other Path*: *The Economic Answer to Terrorism* unambiguously illustrates how the free market, which is based on secure property rights, contributes to the elimination of instigators of violence from the social base.

Another fundamental study on the relationship between property rights, political instability, violence, and development was presented by Stephen Haber and his co-authors (Haber et al. 2003), who analyzed empirical evidence from Mexico under the long dictatorship of Porfirio Diaz (1876-1911) and during the prolonged period of permanent instability related to revolution, civil war, and military coups from 1911 to 1929. Their work showed that in conditions of political instability and power fluctuations, property rights may be enforced as private, not public goods, which ultimately shapes the performance of the economy. In short, the relationship between political instability, property rights protection, and development is not obvious.

Robert Bates (2001) challenged the conventional scholarly wisdom on this issue by placing political violence at the center of analysis, with property rights and other state institutions arising endogenously from political decisions and the use of force. Bates shows that in stateless

societies, organized violence can enforce property rights protection and therefore stimulate growth.

Violence has recently become an urgent issue in political science and economics. A significant body of literature now focuses on the causes, consequences, and dynamics of civil wars (Fearon and Laitin, 2003; Collier and Hoeffler, 2004; Kalyvas, 2006), insurgency and counterinsurgency (Weinstein, 2007), terrorism, and related issues. In summary, this recent research stresses that the most favorable conditions for violence are weak state institutions, low level of economic development, high levels of inequality, natural resource abundance, ethnic polarization, and rough terrain. However, these variables are not always robust from study to study, which suggests the need for further research. One possible approach to understanding the nature of violence, proposed by Stathis Kalyvas (2007) in his review on civil war studies, is the exploration of the "rural dimension" of conflict. This idea comes from the facts that "poor societies tend to be rural, and insurgencies tend to begin with and are fought primarily in the rural countryside" (Kalyvas, 2007: 422). Classical political science studies, written mostly in the 1970s, emphasized the rural roots of large-scale organized violence (Moore 1966; Huntington, 1968; Scott, 1976; Popkin, 1979), but the problem is poorly presented in the field's current research agenda. However, both the "classics" and current researchers agree that opportunity structure for organized violence in a rural context is supported by local norms of solidarity and reciprocity, the difficulties of government control and policing, and the availability of significant human resources. The most important and controversial problem in this context is the impact of the forms of ownership and land distribution.

The most compelling recent investigation of the impact of insecure private property rights over land on the electoral process and violence was conducted by Catherine Boone (2011), who shows how politically allocated land rights provoked electoral violence in the Rift Valley in Kenya in the early 1990s. She stressed that rural violence during this period occurred precisely where land rights were fragile and subject to allocation by a state that created opportunities and incentives for ruling elites to manipulate land-tenure relations and grievances for electoral gain. The in-depth analysis of the Kenyan case was supplemented with empirical evidence from other African countries such as Zaire, Zimbabwe, Rwanda, and Cote d'Ivoire. However, Boone's work and other studies devoted to the political economy of land ownership and redistribution (Mason, 1986; Wood, 2003) are based on narratives, while research based upon statistical testing of the models that are the "lingua franca" in the debate are almost absent, since land property patterns are very hard to measure. My research attempts to fill this lacuna.

I also draw upon the study of electoral politics in agrarian societies, especially to research on clientelism (Scott, 1972; 1976; Mason, 1986; Kitschelt and Wilkinson, 2007) because "the

resource base of the patrons invariably includes land; and it is their control over land that is the foundation of their power" (Mason, 1986 p. 490). Important theoretical and empirical achievement in this field was done by James Robinson and his co-authors (Conning and Robinson 2007; Robinson and Baland, 2008) who have shown how how the landed oligarchy transfers their material resources in political power and how property rights over land and political regimes are jointly determined. Michael Albertus (2011a, 2011b) analyzes the impact of the redistribution of land on political regimes performances in a series of papers on Latin American countries. Boone (2009) presents solid empirical support for the logic of the allocation of property rights over land as a predominant patronage strategy in the African context.

Finally, it is worthwhile to note the studies of political process and violence in the North Caucasus. Notably, Georgi Derluguian's (2005) book provides a compelling narrative and an in-depth analysis of the transformation and collapse of Soviet political system in the Caucasus. Relevant and high-quality empirical studies based on evidence from the Caucasus were conducted by Jason Lyall (2009; 2010), who has explored how the organization of state violence affected insurgency in Chechnya. Further, Yuri Zhukov (2010) has analyzed the impact of the road infrastructure on the diffusion of insurgency, and John O'Loughlin and Frank Witmer (2010) have addressed the geographic factors of violence. Despite the wealth of empirical evidence, the political processes and violence in the region remain underexplored, which calls for new studies.

Dagestan: The Social Context

Dagestan is a perfect place for studying the interrelationships between land, power, and violence. Arguably, it represents the "developing world" in miniature.

Dagestan is a predominantly agrarian region, with 57% of its 3 million residents living in the rural area. Land is the region's most valuable resource. In addition to the natural scarcity of this resource, land relations are complicated by the absence of formal private property rights. As a consequence, there are a number of grounds for appeals for it, which combine Russian law, traditional common law (*adat)* and Sharia law. In the Soviet period, all land was under collective (*kolkhoz*) and state (*sovkhoz*) ownership. After the collapse of the Soviet system, this land was either captured by local strongmen and organized crime or redistributed within local communities. Given the moratorium on privatization, land was registered through different quasi-private property institutions, such as long-term tenure for 49 years. However, a large amount of land remains unregistered and is subject to redistribution by local politicians.

Conflicts over land are very common and often incorporate ethnic tensions (International Crisis Group, 2008).

Politics in Dagestan is characterized by elite capture and highly fragmented power. No single actor dominates Dagestani politics: instead, there are many political alliances, clans, and local strongmen that compete for elected office and distribution of resources, primarily in the form of subsides from the federal center. The electoral process in Dagestan is shaped by a complicated system of formal and informal institutions (Lazarev, 2010). Institutional influences include path-dependency from the medieval social practices of *jamaats*, local communities that were organized as ancient *poleis* (Ware and Kisriev, 2001), and the institutions of electoral authoritarianism ("power vertical") imposed by the federal authorities of Russia.

Currently, Dagestan is experiencing a high level of violence. According to many experts, the situation in Dagestan can be most accurately described as a low-level civil war. During the first six months of 2011, at least 61 armed conflicts occurred in the republic: this figure includes special operations, shelling of power agents and civilians, and fire fights between law enforcement agents and members of the illegal armed groups.[4] At least 204 people lost their lives and 149 were injured in these incidents.

The major driver of violence is the Islamist insurgency, caused by the deep religious split between followers of traditional Sufi Islam, who are backed by officials, and Salafis (Wahhabis), who fight for "pure" fundamentalist Islam (International Crisis Group, 2008; Holland and O'Loughlin 2010).

It is important to note that mid-19th century Dagestan was also a base for Islamist insurgency led by Imam Shamil against the Russian Empire (Ware and Kisriev, 2010). In contrast, the current violence in Dagestan has no leadership and is extremely decentralized. In most cases, terrorist groups have local roots that provide a base for studying and comparing the impact of social environment on their support. In addition to insurgency and terrorism, during the post-Soviet period Dagestan has been subjected to political assassinations, riots, and inter-ethnic and communal conflicts.

In terms of political science, Dagestan can be described as a weak state. The dominance of clan politics over republican governance, the insecurity of property rights, enormous corruption, and a pervasive second economy all lead to the absence of bureaucratic autonomy and low administrative capacity. The weakness of the state means that local politics and social divisions play an especially important role in political life.

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[4] Dagestan: at least 353 persons lost or injured during the first half of 2011. Caucasian Knot. http://www.eng.kavkaz-uzel.ru/articles/17821/

Dagestan has an extremely fragmented ethnic composition. There are more than 30 significant ethnic groups, none of which has an absolute majority in the republic (see the ethnic map of Dagestan in Appendix C). The largest groups are Avars (29% of the total population), Dargins (16%), Kumyks (13%) and Lezgins (12%). Russians (7%), Azeris (4%), Chechens (5%) and several others also recognized as official ethnic groups of Dagestan (Ware and Kisriev, 2001). The highest level of ethnic diversity is represented in the so-called Kumyk valley, an area of fertile soil that was originally settled by Kumyks and was exposed to the intensive migration of mountain communities during the middle of 20th century. Initially, this migration was administrated by Soviet authorities, but it later became unregulated and led to ongoing disputes over land that were expressed through "sons of the soil" conflicts (Fearon and Laitin, 2011).

Social cleavages in Dagestan have also sharply divided the population between the masses and the elites who have captured economic and political rent from social transformation following the collapse of the Soviet Union. As a result, social inequality in Dagestan is extremely high.

Since Dagestan is a mountainous area, it is possible to conclude that it combines all crucial factors that are relevant to the research problem: insecure property rights, power pluralism, violence, a weak state, rough terrain, ethnic fractionalization, inequality, and a low level of economic development. Such a unique constellation of factors provide an excellent opportunity to test the explanatory power of the insecurity of property rights over land for electoral outcomes and violence and compare it with the powers of other strong predictors of them.

Hypothesis and the Main Argument

While studying the political effects of the property rights, it is helpful to differentiate between their allocation and security, as the two are related but analytically distinct (Markus, 2012 forthcoming). In this study, I will concentrate on the security of property rights, implicitly assuming that it determines the opportunities for allocation: in case of insecure property rights over land, power-holders can more easily distribute assets for their personal gain. This assumption connects property rights regimes with patronage politics.

 The relationship between the security of the property rights over land and the patterns of land inequality is less clear. Land inequality affects patronage politics and grievances, which in turn may stimulate violence (Russet, 1964). On the one hand, the dominant strategy of the rich in unequal societies is to secure their wealth by investing in property rights enforcement (Acemoglu and Robinson, 2006). On the other hand, the rich may favor poor protection of property rights if it serves their economic interests, for instance, by permitting the expropriation of weaker actors'

assets (Sonin, 2003). I argue that such variables as inequality, poverty and unemployment are mediating factors in the relationship between property rights and political processes that is expressed in my hypotheses.

The main hypothesis of the study is that *when property rights over land are weaker, electoral competition and violence are more intensive.*

The microfoundations behind it are threefold:

First, insecurity of property rights over land increases uncertainty over its distribution, leading to conflicts that are carried out with both bullets and ballots. The most common forms of such conflicts are communal and interethnic. Anecdotal evidence for this claim can be found all over the world, from Abkhazia to Zimbabwe. In the most cases, these conflicts are exploited or even provoked by political elites, who use them to entrench their power resources.

Second, insecure property rights limit access to land, which leads to unemployment, inequality, poverty, and frustration that can subsequently be expressed in political opposition and support for insurgency. Grievances also arise from corruption that flourishes by manipulating the allocation of land. Moreover, poor economic conditions make it easier to recruit into the ranks of anti-government forces. Evidence for this theory has been provided by political processes in Colombia, El Salvador, Guatemala, Peru, India, Nepal and many African countries (Daudelin, 2003). In most cases of rural insurgencies, the effect is supposed to be direct, but in the context of Dagestan, frustration is mediated through religious radicalization that in turn is expressed in violence. This causal mechanism is also present in Afghanistan, where the Taliban Islamist movement is building rural support by usurping the role of the central government in administering and adjudicating land ownership and by expropriating the property of landlords to distribute it among the poor (Wily, 2003).

Third, due to permanent land disputes, insecurity of property rights weakens community cohesion, control, and mobilization capacities. In general, the modernization process causes the breakdown of traditional society with its dense network of intra-community monitoring and mobilization potential (Huntington, 1968). In relation to property rights, the process of weakening of community ties is defined by the move from different forms of collective and individual ownership to private holdings, which may decrease trust and local authority.

The mechanisms that link insecure property rights with political competition and violence are interconnected and support each other. Figure 1 presents the argument in graphical form.

Alternately, it is possible to assume that insecurity of property rights may decrease electoral competition and violence, as weak rights may increase the political resources of an incumbent through patronage based on control over redistribution of land. It is also plausible that poverty, inequality, unemployment, and grievances lead to incumbency advantage, since these

conditions may be favorable to those who hold the power and help them maintain their positions through patronage or unconstrained coercion. Finally, conflicts over land can enforce community cohesion and mobilization potential, if the rivals are outsiders. Figure 2 presents the alternative hypothesis that *when property rights over land are weaker, electoral competition and violence are less intensive.*

Thus, there are two possible alternative scenarios of the influence of the insecurity of property rights over land on electoral competitiveness and violence. It should be noted that both arguments stress the indirect influence of the property rights regime. Therefore, instead of arguing for straightforward causal links, I present the main explanatory variable as the opportunity structure that shapes incentives in electoral processes and violent conflicts. The next sections are devoted to testing these hypotheses.

Case Studies

To illustrate the salience of the relationship between insecurity of property rights, the electoral process, and violence in the North Caucasus, I explore two case studies. First, I present the political background and dynamics of the armed conflict in the Novolak district of Dagestan, which began in 1999 when Chechen Islamist militia led by warlords Shamil Basaev and Khattab invaded the neighboring republic. Second, I introduce causes and consequences of the land conflict between two Dagestani villages, Kostek and Noviy Kostek, which has lasted from the collapse of the Soviet Union to the present.

Novolak War

The Novolakskiy district of Dagestan, situated on the border with Chechnya, was created in 1944 in place of the Auhovskiy district after the deportation of the indigenous Chechen population.[5] The Soviet authorities of Dagestan settled the Lak people, one of the Dagestani mountain ethnic groups, in place of the deported Chechens. In 1957 the Chechens were allowed to come home and from that time, the Novolak district became the subject of permanent land disputes, which were exacerbated by ethnic tensions. In Soviet times, government control and the collective organization of labor smoothed the problem. After the collapse of the Soviet Union, conflicts over land resulted in several mass fights among the youth. As a consequence, the authorities of Dagestan decided to resettle the Laks and for that purpose government granted

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[5] The expulsion of all of the native Chechen and Ingush people of the North Caucasus to Siberia and Kazakhstan was organized by Soviet authorities as a punishment for their alleged collaboration with the Nazi Germans during the World War II.

them a special area near Makhachkala, the capital of Dagestan. However, resettlement was delayed and remains incomplete. Consequently, interethnic tensions continue to be a problem.

The conflict in Novolakskiy district grew violent in 1999's Islamist invasion led by Chechen warlords Shamil Basaev and Khattab. As a result of the armed conflict, 56 locals were killed and several villages were destroyed. The invasion of Chechen rebels faced serious resistance by the local Lak population, who formed militias and helped the Russian armed forces annihilate the enemy. At the same time, the local Chechen population divided: some people supported the invaders, some left the district, and the population of two Chechen villages, Ahar and Shushia, even fought with their co-ethnics (Memorial, 1999). One of the reasons for such a divide was a conflict over land between Laks and Chechens in the Novolakskoye and Novokuli villages, both of which are sites of large Soviet-era collective farms. Uncertainty over land titles fueled inter-ethnic strife and expressed itself in support for the invaders from local Chechens. After the end of the armed conflict, the Lak militia groups indiscriminately looted and destroyed Chechen houses (Memorial, 1999), so both sides used violence.

The redistribution of land in the Novolak district associated with the resettlement of Laks also provoked high government turnover and political violence. For instance, Arsen Kammaev, who led the Lak militia during the war, was assassinated in 2001. In Makhachkala, the head of Novolakskiy district, Arsen Haidakov, was killed in 2004. However, resources from land redistribution allowed the current Novolak incumbent Gadshi Andiev to eliminate electoral competition. In the 2010 elections, he received more than 80% of votes.

Kostek Conflict

The Dagestani village Kostek appeared in Russian mass media in spring 2010 as the birthplace of Dzhennet Abdurakhmanova, the 17-year-old suicide bomber who killed more than 20 people in an attack on the Moscow underground. Although it is impossible to conclude whether or not her social context influenced her action, the fact that Kostek is characterized by frequent counter-terrorist operations suggests some reasons why this might be true.

Kostek is an old village in the Khasavurt district with a population of more than four thousand people. The majority of the village is ethnically Kumyks, an ethnic group that used to live in the lowland of Dagestan. On the immediate border of Kostek is Noviy (New) Kostek, a village populated by the Dargin people who resettled in the Kostek area in 1957. In Soviet times, the Kumyks and Dargins were incorporated in the kolkhoz (common farm) and inter-community relations were peaceful. However, in 1990 redistribution of the land that previously was in collective ownership led to a lingering conflict. It was escalated by elections when Dargins refused to vote for the leader of "Tenglik", the Kumyk national movement. Squatting and seizure

of farmland by both sides resulted in a series of violent clashes between the youth. Full-fledged violence was blocked only after the involvement of the Republic-level authorities. As a consequence of the conflict, the two neighboring villages became isolated from each other and the rights over land remained uncertain. Restricted access to the land has led to a high level of unemployment that engenders high rates of crime and support for insurgency in the large militarized villages. Another important consequence of permanent disputes over land and related unemployment has been the weakening of intra-community control. Many people, including Abdurakhmanova's family, left the village as migrant workers and therefore became un-accountable to the jamaat's policing.

The political effects of the unresolved Kostek land conflict can be illustrated by Alimsoltan Alhamatov, originally from Kostek, who became the head of the Khasavurt district and the most influential Kumyk politician. He received 98% of votes in his campaign to leadthe Khasavurt district, the most populous and ethnically heterogeneous district in Dagestan with the largest amount of untenured land and highest rate of violence. In 2009 Alhamatov himself was assassinated.

Although the cases described above give a multifaceted picture of the research problem, they do not allow it to be explored systematically. The Novolak war was primarily caused by an exogenous shock (invasion of Chechen rebels), not by local condition; terrorist attacks in the Moscow's underground are extraordinary accidents; and the patterns of elections in two districts of the republic cannot be extrapolated to all whole of Dagestan. The next section goes beyond these illustrations and develops a statistical analysis of the hypothesis of the study.

Empirical Analysis

Research Design

In order to explore the political effects of the insecurity of property rights over land, I analyze original district-level data from Dagestan that was collected during two stages of field research in October 2010 and May 2011. My sample consists of all 41 districts of the Republic (See the map in Appendix B) and there are several reasons for using this unit of analysis.

First, the districts of Dagestan provide enormous variation in geographic, demographic, economic, and political backgrounds. For instance, the Khasavyurt district has more than 130 000 residents, is lowland on the border with Chechnya, and is characterized by high levels of ethnic fragmentation and the lowest level of income per capita. In contrast, the Agul district is a highly mountainous and ethnically homogeneous community with only 11 000 residents who live on massive subsidies. The map of Dagestan districts is presented in Figure 3.

Second, land relations are administrated on the district level in Dagestan, including redistribution of plots and titling.

Third, heads of the districts in Dagestan are very powerful. Some of them can even challenge the President of the Republic (see the Economist, 2011 April, 7th), and redistribution of land is one of their most important economic and political resources.

Following the research strategy of studying the causal relationship between the insecurity of property rights over land and electoral competition and violence, I exploit different techniques of regression analysis, to test the explanatory power of factors from my causal story.

To address the problem of endogeneity (a loop of causality between the independent and dependent variables), I use the data on land provision from the Soviet period and test the influence of its redistribution on the indices of violence during the post-Soviet period. Violence has had a significant effect on property rights establishment and allocation, but in the 1990s the prevalent patterns of violence were ethnic conflicts and political assassinations and since 2003 it has been expressed primarily as religious insurgency. Thus, the sequence of time periods between explanatory and dependent variables allows me to achieve chronological validity and therefore claim unbiased causal inference.

Variables and Data

The first dependent variable, electoral competition *(ElectoralCompetition),* is measured by a vote margin, the difference in the result of the winner and second candidate in elections, the operational variable almost universally used in the literature to measure closeness of elections. When the difference is larger, the competition is lower. I analyzed the elections that were held on October 10, 2010 in the majority of the districts of Dagestan.

As the indicator of the second dependent variable, violence (*Violence*), I include terrorism; counterterrorist operations of law enforcement agencies against so-called NVF (illegal armed groups of the Islamist insurgents); political assassinations; and acts of communal violence that in the Dagestan context are called «mass fights with the use of weapons». I use the "Chronicle of Violence in Dagestan" database for the period from 2003 to 2011, collected by the information portal "The Caucasian Knot", as a source of these data.[6] These data are an account of the all incidents of political (non-criminal) violence occurred in the Republic of Dagestan from 1996 to the present. It is more reliable and comprehensive than both the official statistics of the Interior Ministry of the Republic of Dagestan (police) and human rights organizations datasets, such as the well-known "Memorial" dataset, which is focused on Chechnya. Due to methodological and

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[6] Internet access: http://www.kavkaz-uzel.ru/articles/73122

substantive reasons, I restricted the Caucasian Knot's data to the period from January, 1, 2003 to July, 1, 2011. It allows me to follow the chronological validity in my causal story by separating the time of establishment and distribution of property rights (1991-2003) and the period of intensified violence (2003-2011). In the 1990s, violence in Dagestan was carried out by Chechen rebels, not locals, but in 2003-2004 the active phase of the Second Chechen war ended and an Islamist insurgency gradually rose in Dagestan (International Crisis Group, 2008). Therefore, there is no way that my dependent variable (violence) affects independent one (property rights security in the previous period), which has crucial importance for unbiased estimation. When coding the data, I excluded the incidents of violence that occurred in Dagestan's large cities, Makhachkala, Derbent, Buinaksk, and Khasavyurt, and put in the index only the events that took place in rural areas.

The lack of a complete cadastral survey in Dagestan forced me to use indirect measures of land provision and distribution. First, I collected data on the total amount of agricultural land on January 1, 1989, during the late Soviet period when all land was in collective ownership. These data were used for the construction of "Land 1989" variable. Then, I found the numbers on the amounts of land tenured with long-term contracts on January 1, 2003, and constructed a variable "Land2003". Data on these measures used the State Archive of the Republic of Dagestan. Afterwards, the main explanatory variable (*PRSecurity*) was calculated by subtraction of the indices of "Land 2003" from indices of "Land 1989". Thus, the disparity between Soviet-era time land amounts and post-Soviet tenured land that shows the level of redistribution and the presence of unregistered land serves as a proxy for insecurity of property rights. I calculated the variable in the form of percentage of land that is untenured.

Control variables for the model include socio-economic, demographic and geographic indicators. To take a proper account of poverty, inequality, unemployment, and other crucial socio-economic indices in Dagestan is a significant challenge, due to the fact that in the most cases statistical data are either absent or do not correspond to reality. The republic is characterized by a large "shadow economy" of unrecorded small-scale farming that makes it difficult to estimate income per capita and real amount of unemployment. Considering these limitations, I nevertheless include in the analysis several socio-economic variables that are based on data that seem to be the most reliable among available options. Thus, inequality (*Inequality*) of land holding is measured by the ratio of large profitable agricultural firms to the total number of firms in the structure of municipal economy. This indicator is provided by the Russian Federation Federal State Statistics Service (ROSSTAT).[7] The data are available for 2009. With

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[7] Russian Federation Federal Statistics Service municipal level data:
http://www.gks.ru/scripts/db_inet2/passport/munr.aspx?base=munst82

the ROSSTAT municipal data, I also calculated the mean values of municipal income per capita (*Income*) for the period from 2006 to 2010, which serve as an indicator of poverty. Complementary controls for the level of socio-economic development are municipal budget revenues (*Revenues*), subsidies (*Subsidies*), and expenditures (*Expenditures*), calculated by dividing the means for the period from 2008 to 2010 per capita.

To control for demographic factors, I created variables on population in 1989 (*Population1989*) and population in 2002 (*Population2002*) using data from All-Russian censuses. The difference between these indices was used to measure the population increase that is used as a proxy for migration (*PopulationIncrease*). With the data of 2002 census, I also calculated a measure of ethnolinguistic fractionalization (*ELF*), a standard variable used in social sciences for studying factors of diversity. Unfortunately, the lack of relevant data did not allow me to calculate a measure of the religious fractionalization that in Dagestan's context can express the divide between Sufi and Salafi versions of Islam: this fractionalization is the dominant cause of violence in contemporary North Caucasus. However, this disadvantage can be disregarded because religious fractionalization can be presented as a mediating variable with the level of grievances.

To capture the geographic factor that is shown to be a very powerful predictor of the violent activity, including insurgency and terrorism (Fearon and Laitin, 2003), I use two measures. The first is the nominative variable "*Terrain*", which separates the effects of mountain, foothill and lowland terrain that are coded as 3, 2 and 1 respectively. Second, I control for the distance to Makhachkala, the capital city of the Dagestan Republic (*Distance*). This measure allows me to control for accessibility for government monitoring and also factors in the price of land. The closer is the land to Makhachkala, the more expensive it is. Finally, I include in the analysis a dummy variable showing whether a district borders upon the Chechen Republic (*ChechnyaBorder*). For a long time, especially at the beginning of the 2000s, the uncontrolled border with Chechnya was the major destabilizing factor in Dagestan. Furthermore, the repressive counter-terrorist policy of the federal government gradually dislodged rebels and terrorist groups from Chechnya, and local Chechen armed forces transferred their bases to the border districts of Dagestan.

Descriptions of the data can be viewed in Table 1 and summary statistics are presented in Table 2.

Analysis

To test the hypothesis of the study, I estimate models separately which consist of the predictors of two dependent variables, namely electoral competition and violence. Exploring the

relationships between the core variables of the research, I first analyze partial correlations between them (the correlation matrix is presented in Table 3) and then develop the explanatory models for both dependent variables, including in the models only those factors that were significant in the correlation analysis. In that way, I produce the following models:

Model 1. *ElectoralCompetition = PRSecurity(t-1) + Income + Inequality + Subsidies + Population2002 + ELF*

Model 2. *Violence = PRSecurity(t-1) + Income + Inequality + Subsidies + Population2002 + Population Increase + ELF + Terrain+ Distance + ChechnyaBorder*

Since the dependent variable in Model 2 is a count of a number of violent incidents, the simple OLS regression analysis of it may provide biased results. This problem is solved twofold. First, I run the OLS regression model with the log-transformed dependent variable. Second, I exploit negative binomial regression, which is designed specifically for the event count dependent variables estimation.[8] Though it is not recommended that negative binomial models be applied to small samples, I use this technique since it serves as a good robustness check for the OLS estimation. What is more, what constitutes a small sample does not seem to be clearly defined in the literature. My sample of 41 districts of the Republic of Dagestan is only slightly smaller than the sample of the USA' states, which seems to be one of the empirical materials most exploited by political scientists.

The results of the estimation of Model 1 are presented in Table 4. Results of the tests of the Model 2 are shown in Table 5 (for the OLS regression of the logged violence) and Table 6 (for the negative binomial regression analysis).

Results and Interpretation

The main result of the empirical analysis is that both alternative theoretical models received some support, as applied to the explanations of different dependent variables. The percentage of untenured land that expresses the level of insecurity of property rights increases violence but decreases electoral competition. The relationships are statistically significant and robust to different specifications of the models. Although the magnitude of the effect of property rights security on violence is not high, it is strong relatively to the other factors.

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[8] . Another alternative tool, a Poisson regression model, is not appropriate in my case, because goodness-of-fit tests indicate that the data are over-dispersed.

The interpretation of such results is as follows. First, large amounts of untenured land allow political leaders to buy loyalty through patronage and protection, which diminishes electoral competitiveness. Thus, land under a fragile property rights regime has proved to be widely exploited as a resource base for the incumbency advantage that confirms the alternative hypothesis of the study and corresponds with findings from other parts of the world (Mason, 1986; Boone 2009, 2011; Albertus, 2011a; 2011b). Second, insecurity of property rights has shown to be powerful predictor of political violence. This supports the main hypothesis of the study and therefore invigorates classical theories of the institutional causes of violence that are deeply rooted in rural social structures (Moore, 1966; Huntington, 1968; Scott 1976).

I argue that the divergence between the directions of the effects of the insecurity of property rights on electoral processes and violence can be attributed to the microfoundations that shape individual and community behavior. Poverty, inequality, unemployment, and frustration caused by restricted access to land, grievances from the widespread corruption associated with untenured land allocation, and conflicts and disputes over land create an opportunity structure for both political bosses and insurgents. Political bosses manipulate the redistribution of land for building patronage networks to hold their power, and insurgents exploit grievances and local conflicts to recruit new fighters and build their own local support networks. Since electoral competitiveness and violence are correlated with each other, it is possible to assume functional links between them. For instance, it is plausible that redistribution of untenured land by political leaders as a resource for buying loyalty through patronage decreases opportunities for the political opposition to obtain power through elections. The opposition may therefore use violence instead of elections to struggle for power. Politicians may also use violence to consolidate power by targeting their opposition as bandits or terrorists. Finally, I would like to emphasize an underestimated but intuitively powerful effect of the insecurity of property rights over land on community cohesion. Poor economic conditions, uncertainty, and conflict may subvert solidarity and trust in the villages, which is likely to atomize locals. This fragmentation helps political bosses mobilize individuals for voting and helps insurgents mobilize individuals for fighting. In the second case, one should also consider a possible negative influence of the weakening of intra-community control, as in the case of Dzhennet Abdurakhmanova, the suicide bomber from Kostek.

In contrast to the effects of insecurity of property rights, the impact of other traditional explanatory variables for electoral competitiveness and violence were found to be relatively modest. For instance, income per capita failed to achieve the level of statistical significance in all specifications of both models. Although it can be explained by the previously discussed

limitations of the data, this result also highlights the fragility of other explanations for voting and violent behavior.

In testing, inequality was a strong determinant of electoral non-competition, but a fragile determinant of violence. The role of land inequality in diminishing political competitiveness can be explained by resource asymmetry, which it provokes, and the fear that elections may result in redistribution by the rich. This finding is in line with the role of land inequality in democratization (Boix, 2003; Answell and Samuels, 2010). It is noteworthy that the measure of land inequality does not correlate with the indicator of property rights protection (See correlation matrix in Table 3), so their effects on incumbency advantage are supplementary.

Another interesting and theoretically important finding of the study is that violence tends to be affected by population increase. One possible explanation of this finding is that population growth causes unemployment, which in turn results in greater needs and grievances and therefore recruitment to criminal gangs and insurgency. This relationship is also connected with the land problem: population increases raise the pressure over land and migration promotes "sons of the soil" conflicts (Fearon and Laitin, 2011), i.e. conflicts between the indigenous population and the newly arrived migrants. As shown in the case studies, in Dagestan this conflict is fueled by ethnic differences between migrants and indigenous people. However, the variable on ethnolinguistic fractionalization remains insignificant in all models. [9] Moreover, my analysis shows that the intensity of violence was not necessarily affected by the rough terrain. In Dagestan, violence occurred both in the mountains and in the lowland.

Finally, the analysis reveals the significance of the variable focusing on the border with Chechnya. This finding proves that the two Chechen wars were a long-term destabilizing factor for these districts, and supports the idea of spatial contagion of violence (Gleditsch, 2007).

The general explanatory power of the analyzed models is quite high: both explain more than half of the total variance. Considering the complex nature of the subject, it can be accepted as a more than satisfactory result.

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[9] This fact can be attributed to the imperfections of the measurement tool, discussed in the literature (Chandra and Wilkinson, 2008).

Conclusion

The spread of violence in the North Caucasus is usually attributed to clan and ethnic tensions, poverty, unemployment, and various geopolitical and conspiracy theories, while idiosyncratic results in electoral protocols are often explained by local "patriarchal political culture". However, institutional causes of political development and violence in the region remained under-explored. This research aims to fill that analytical gap. More generally, it claims to contribute to several important scholarly debates. First, it establishes an argument on the political effects of the insecurity of property rights over land. Second, it considers the land redistribution problem in studies of violence and electoral patronage. Third, it addresses the problem of the interdependence of violence and political competition in agrarian societies.

The main finding of this analysis is that insecurity of land tenure considerably affects both the intensity of electoral competition and violence. However, while violence increases, electoral competition decreases. One possible explanation of this fact is that "shadow" distribution of the land allows power-holders to eliminate electoral competition, which may provoke political outsiders and frustrated locals to use violence to obtain either a sense of justice, or political office and rent. Global tendencies toward population growth, migration, the gradual breakdown of customary legal systems, and the redistributive policies of autocracies and emerging democracies are likely to make property rights over land even less secure in the near future. As the research findings show, these trends may lead to the subversion of democratic politics and the spread of violence.

The policy implications of the study may seem obvious: comprehensive land reform, with transparent land titling and privatization of unregistered assets as its foundation, would promote a competitive political process and avoid violence. However, evidence from other regions of the world shows that although land reform can be a successful counterinsurgency policy (Mason, 1998) and an instrument for breaking clientelistic politics (Mason, 1986), it may be difficult to implement because it harms elite interests (Albertus and Caplan, 2011). The results of my study, which shows the functional link between non-competitive electoral processes and violence, provide a possible explanation of the problem.

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Appendix A

Location Map of Dagestan[10]

Geopolitical map of the Caucasus Region (2008)

Appendix B
Map of the Districts of Dagestan[11]

Note:

1	Agul	22	Kumtorkala
2	Akushi	32	Kurah
3	Ahvah	24	Lak
4	Ahty	25	Levashi
5	Babayrt	26	Magaramkent
6	Bezhta[12]	27	Novolak
7	Botlih	28	Nogai
8	Buinaksk	29	Rutul
9	Gergebil	30	Sergokala
10	Gumbet	31	Suleiman-Stal'sky
11	Gunib	32	Tabasaran
12	Dahadaev	33	Tarumovsky
13	Derbent	34	Tlarata
14	Dokuzpara	35	Untsukl
15	Kazbek	36	Khasavyurt
16	Kaitag	37	Khiv
17	Karabudahkent	38	Khunzah
18	Kajakent	39	Tsumada
19	Kizilurt	40	Tsunta
20	Kizlar	41	Charoda
21	Kuli	42	Shamilsky

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[11]Source: http://ru.wikipedia.org/wiki/%D0%A4%D0%B0%D0%B9%D0%BB:Dagestan_districts_map.gif

[12] Bezhtinskiy uchastok (region) is autonomous region within Tsunta District; therefore the total number of districts of Dagestan is 41.

Appendix C

Ethnic Map of Dagestan[13]

Dagestan
Etniciteit
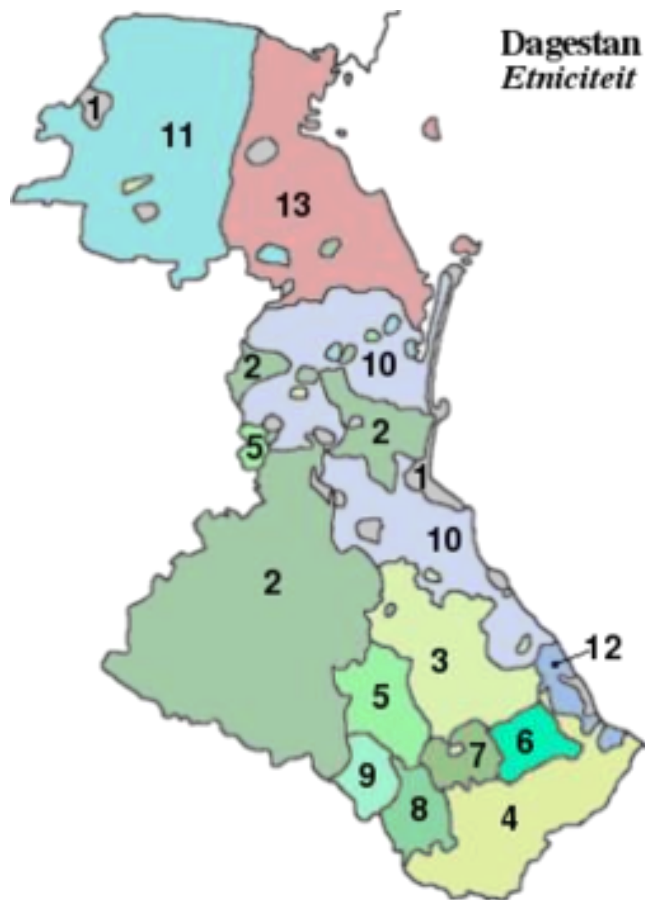
Note:

1 – Mixed Population

2 – Avars

3 – Dargins

4 – Lezgins

5 – Laks

6 – Tabasarans

7 – Aguls

8 – Rutuls

9 – Tsahurs

10 – Kumyks

11 – Nogai

12 – Azeri

13 – Russians

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[13] Source: http://caspian.hypermart.net/dagestan.htm

Figure 1. A Graphical Model of the Main Hypothesis that *when property rights over land are weaker, electoral competition and violence are more intensive.*
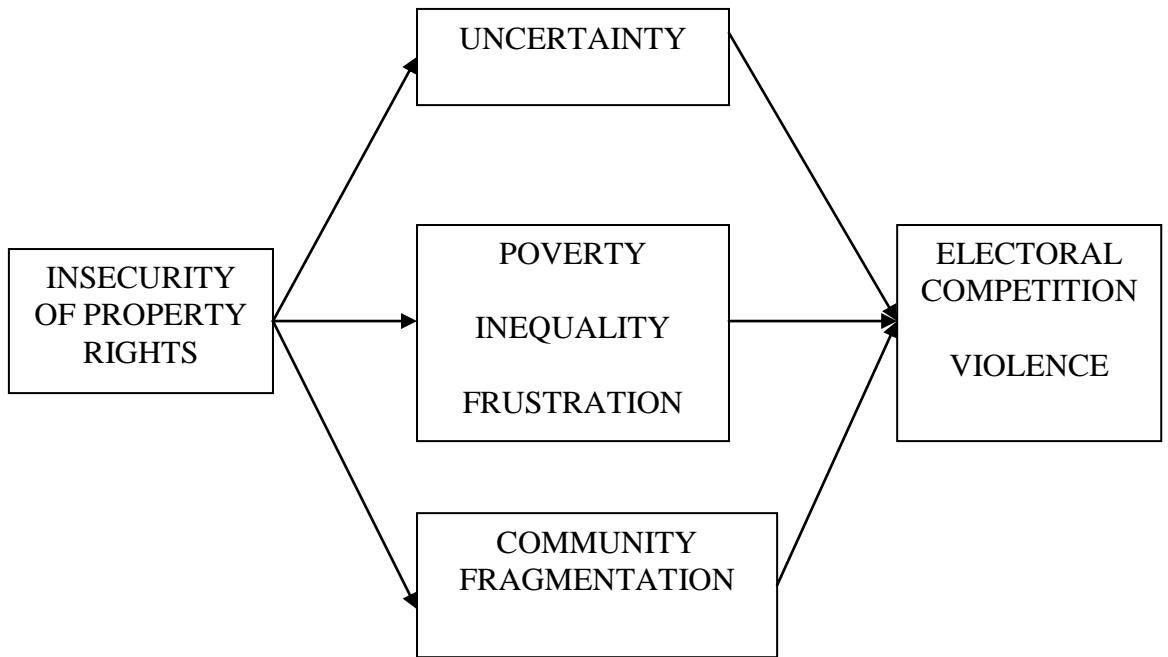

Figure 2. A Graphical Model for the Alternative Hypothesis that *when property rights over land are weaker, electoral competition and violence are less intensive.*
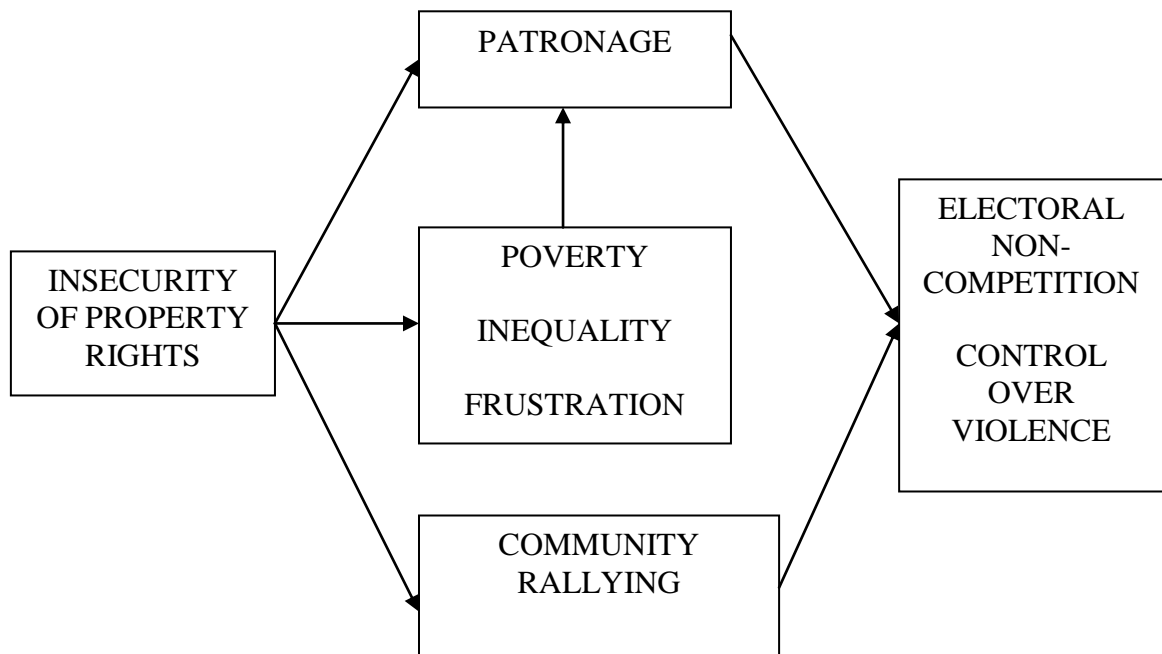
Table 1. Core Variables

Variable	Measure	Source
Electoral Competition	Vote margin – difference in the result of the winner and second candidate on elections.	Russian Central Electoral Commission Website
Violence	Incidents of terrorist attacks, counterterrorist operations of law enforcement agencies, political assassinations; and ethnic conflicts and acts of communal violence for the period from January, 1, 2003 to July, 1, 2011.	Caucasian Knot database "Dagestan: Chronicle of Violence; 1996- 2011"
Security of property rights over land	percentage of untenured land that represents difference between total amounts of agricultural land on 01.01.1989 – the late Soviet period, when all land was in collective ownership and land tenured with long-term contracts on 01. 01. 2003	State Archive of the Republic of Dagestan
Income	Municipal income per capita	Russian Federation Federal State Statistics Service (ROSSTAT)
Inequality	large profitable agricultural firms to the total number of them in the structure of municipal economy	ROSSTAT
Population	Total number of people	All-Russian census 2002
Population increase	Difference between total population in 2002 and 1989	All-Russian censuses of 1989 and 2002
Ethnolinguistic Fractionalization (ELF)	Probability that two randomly selected individuals in a district will belong to the same ethnic group	All-Russian census 2002
Terrain	3- Mountain Region; 2- for foothill; 1- lowland	Municipal Statistics of the Republic of Dagestan
Distance from capital (Makhachkala)	Distance in kilometers	Municipal Statistics of the Republic of Dagestan
Chechnya Border	1 – has border with Chechnya; 0 – has not	Map of Dagestan

Table 2. Summary Statistics

Variable	N	Min	Max	Mean	St. Deviation
ElectoralCompetition (Vote margin)	41	3	98	46.5	34.086
Violence (Incidents)	41	1	44	7.66	9.056
PRSecurity (Percentage of Untenured Land)	41	0	71,3	13.818	18.11
Income	41	3353	8600	6016	1078.9
Inequality	41	30	88	56.24	18.457
Subsidies	41	71718	268108	140324.4	53463.34
Population2002	41	11290	125454	38075.08	24079.9
PoulationIncrease	41	-6541	34372	10317.4	8629.2
ELF	41	0,01	0,8	0.25	0.26
Distance to Makhachkala	41	45	320	186.3	77.4

Table 3. Correlation Matrix

	Competition	Violence	PR	Income	Inequality	Population	ELF	Chechnya
Competition	1	0.433**	0.488**	0.297	0.473**	0.356	0.318*	0.358*
Violence		1	0.505**	0.06	0.374*	0.551**	0.348*	0.324**
PRSecurity			1	0.065	0.240	0.102	0.103	0.130
Income				1	0.133*	-0.124	-0.051	0.256
Inequality					1	0.25	0.348*	0.09
Population						1	0.25	0.076
ELF							1	0.38*
Chechnya Border								1

Note: *p<.10, ** p<.05, ***p<.01

Table 4. OLS Regression Analysis of the Factors of Electoral (Non-) Competition

Explanatory Variables	Model 1 Coefficients (Standard Errors)	Model 2 Coefficients (Standard Errors)	Model 3 Coefficients (Standard Errors)
(Intercept)	32,454*** (6,049)	-27,810 (26,627)	-40,763 (24,643)
PRSecurity	0.949*** (0.268)	0.852*** (0.239)	0.856*** (0.216)
Income	-	0.03 (0.04)	0.05 (0.04)
Inequality	-	0.773** (0.235)	0.540** (0.295)
Subsidies	-	-	0,00 (0.00)
Population2002	-	-	0.09** (0.00)
ELF	-	-	9.776 (18.550)
R2	0.254	0.445	0.595
Adjusted R2	0.233	0.398	0.519
N	41	41	41

Note: *p<.10, ** p<.05, ***p<.01

Table 5. OLS Regression Analysis of the Factors of Violence (logged)

Explanatory Variables	Model 1 Coefficients (Standard Errors)	Model 2 Coefficients (Standard Errors)	Model 3 Coefficients (Standard Errors)
(Intercept)	4,610** (1,471)	0,058 (0,471)	0,347 (0,511)
PRSecurity	0.012** (0.04)	0.011** (0.04)	0.09** (0.04)
Income	-	0,00 (0.00)	0,00 (0.00)
Inequality	-	0.09** (0.04)	0.05 (0.04)
Subsidies	-	-	0,00 (0.00)
Population2002	-	-	0.00 (0.00)
PopulationIncrease	-	-	0.05** (0.00)
ELF	-	-	-0.102 (0.347)
Distance	-	-	-0.02 (0.01)
Terrain	-	-	0.042 (0.55)
Chechnya	-	-	0.299** (0.115)
R2	0.184	0.282	0.593
Adjusted R2	0.162	0.240	0.517
N	41	41	41

Note: *$p<.10$, ** $p<.05$, ***$p<.01$

Table 6. Negative Binomial Regression Analysis of the Factors of Violence

Explanatory Variables	Model 1 Coefficients (Standard Errors)	Model 2 Coefficients (Standard Errors)	Model 2 Coefficients (Standard Errors)
(Intercept)	1.44***	0.572	0.255
	(0.24)	(1,1)	(1,8)
PRSecurity	0.031**	0.033**	0.026**
	(0.01)	(0,01)	(0,01)
Income		0.00	0,00
		(0.01)	(0,00)
Inequality		0.014*	0,014
		(0.00)	(0,01)
Subsidies			0,00
			(0,00)
Population2002			-0,06
			(0,24)
PopulationIncrease			0,133**
			(0,08)
ELF			-0,428
			(1,2)
Distance			-0,02
			(0,01)
Terrain			-0,12
			(0,67)
ChechnyaBorder			0,015**
			(0,04)
Chi-Square Log-likelihood (degrees of freedom)	8,048 (1)	10,8 (3)	27,3 (10)

Note: *p<.10, ** p<.05, ***p<.01;

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