Customary institutions and the demand for land titling in late Imperial Russia*

Natalia Vasilenok

Stanford University

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Abstract

How do individuals choose between formal and customary institutions? In developing countries, modernizing reforms, such as the introduction of formal land titling, often lag in the popular take-up despite their potential economic benefits. Focusing on the 1906 land reform in the Russian Empire, I examine the factors driving peasants' choice to break away from a traditional institution of peasant commune that governed land tenure in favor of private property rights provided by the state. Taking advantage of newly digitized data covering 2,500 peasant communes in the province of Simbirsk in the southeastern part of European Russia in 1910–11, I argue that the demand for formal titling depended on the expected returns it provided in comparison to communal institutions. I show that peasants tended to take advantage of the reform whenever they perceived their property rights as insecure. However, if a commune offered a safety net by guaranteeing access to land to its members, the demand for land titling decreased. My results imply that the design of land reforms should account for the potential effects of customary institutions.

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1 Introduction

How do individuals choose between formal and customary institutions? Even though formal institutions have been considered crucial for long-term economic development and efficient public goods provision, customary institutions continue to co-exist with the state around the globe, often competing with and triumphing over it. Despite their potential economic benefits, modernizing reforms that improve citizens' access to formal institutions often lag in the popular take-up (Vendryes, 2014), whereas traditional authorities, such as hereditary chiefs in Africa, integrate into the state's institutional structure (Baldwin, 2015). This paper examines how variation in customary institutions affects individual decisions to stay away from or to engage with the state in the context of land titling.

The literature on the political economy of land reforms has primarily focused on the supply side of property rights. It suggests that withholding property rights from rural dwellers allows political elites to prevent masses from engaging into regime-undermining collective action and demanding political rights (Albertus, 2021). However, when land reforms or land titling programs are actually implemented, they often experience only moderate success, despite the fact that only 30% of the global population enjoy formal property rights (Tuck and Zakout, 2019).[1] Looking at the demand side of land reforms, I suggest that the adoption of formal titling depends on the expected returns that titling provides in comparison to pre-existing customary institutions.

This paper exploits the historical case of the 1906 land reform in the late Russian Empire. The reform provided millions of peasants with access to property rights on land for the first time in Russian history. Prior to the reform, peasant land had been owned collectively by a peasant commune, which prevented peasants from collateralizing or selling their plots. On top of that, communal land was legally subject to periodic reallocation – or repartition (*peredel*) – among the residents of a commune, decreasing incentives for investment in land improvement. The reform allowed peasants to privatize land plots they were currently farming without requiring them to obtain the consent of a commune. Titled plots could be sold to other peasants or used as a collateral. Recent research has documented that the reform succeeded in improving agricultural productivity (Castaneda Dower and Markevich, 2018) and promoting domestic migration by improving land liquidity (Chernina et al., 2014).

The take-up of the reform, however, did not seem commensurate with the economic benefits of land titling. In the first decade of the reform implementation, interrupted by the 1917 Revolution, only around 20% of peasant households became private owners of their plots with a substantial variation both in time and space (Davydov, 2022). There have been no quantitative studies attempting to explain the variation in the demand for the reform; the scarcity of micro-level data being one of the potential reasons behind such a neglect. In this paper, I study factors governing peasants' decisions to title their land, taking advantage of commune-level data from the province of Simbirsk in the southeastern part of European Russia in 1910–11.[2] My results suggest that the demand for the reform was associated with the features of customary institutions that governed land reallocation – the intensity of repartitioning and allocation rules employed by a commune.

[1] For example, in Mexico, the reforms of 1992–1993 allowed for privatization of communal *ejido* lands, but less than 1% of households acquired full private property rights ten years in reform implementation (Lavadenz et al., 2001).

[2] Map C1 in the Appendix locates Simbirsk province within the Russian Empire.

I first demonstrate that the intensity of land repartitioning varied greatly across communes. Although 99% of communes in Simbirsk province formally held their land in repartitional tenure, around one third of all communes did not resort to repartitioning. I then show that the communes that did not practice repartitions displayed a significantly lower demand for land titling. While the average privatization rate in Simbirsk province constituted around 18%, in communes that did not practice repartitioning, privatization rates were, on average, 4 to 5 percentage points lower than in communes that did.

The result implies that the residents of communes that did not impose reallocation risk faced a weaker incentive to title their land. In communes where land was subject to reallocation, in contrast, the reform provided a means of protecting land from a threat of a future repartition. Leveraging the imperial law of 1893 that limited the frequency of repartitions to at least twelve years, I demonstrate that privatization rates increased in communes that approached the twelve-years threshold, lending further support to the hypothesis that the reform provided peasants a way to secure their property against a threat of losing land in an upcoming reallocation.

Second, I find privatization rates differed across reallocation rules that communes employed to distribute land among households. Some communes tended to adjust land holdings to family labor resources by distributing land plots according to the number of residing male family members. Other communes, in contrast, did not employ family structure adjustment. In such communes, the size of a land plot assigned to a household at the emancipation of serfs in 1861 was maintained over time, which, in turn, produced inequalities in the distribution of land across families. I find that communes that adjusted land holdings to family structure displayed significantly lower titling rates than communes that did not. The average difference in titling rates between the two types of communes amounted to 7 percentage points.

To uncover the incentives created by different reallocation rules, I examine how the practice of repartitioning shaped access to communal land. Nafziger (2010) argues that repartitional communes provided peasants with a safety net by ensuring access to land for every member of the commune. I demonstrate that access to the safety net varied across different types of repartitional communes. Communes that employed a male repartition rule, thus accounting for available family labor resources, displayed a significantly higher share of households who were allocated a land plot. It appears that, by improving access to land, in the absence of other forms of social insurance, the male repartition rule decreased the expected returns of privatizing compared to the rule that maintained the same size of a land plot within a family.

My results rely on the unique data set that covers the universe of about 2,500 communes across 153 townships (*volost'*) in 8 districts (*uezd*) of Simbirsk province. The data come from the agricultural census conducted by the local government in 1910–11, five years after the start of the reform implementation, and contain fine-grained information on the participation in the land reform, commune-level institutional variation, and a battery of socio-economic variables. I then geolocate communes relying on a wealth of historical maps of Simbirsk province and supplement the census with geographical information. However, as the data constitute a single cross-section, my results should be interpreted as conditional correlations rather than causal effects.

The discussion revolving around the 1906 land reform in both historical and economic literatures has mostly neglected the institutional underpinnings of the reform. The literature either attempted to infer peasants' preferences for communal institutions from

low participation rates (Pallot, 1999) or trace the effects of the reform on agricultural productivity at the provincial level (Castaneda Dower and Markevich, 2018), which inadvertently masks institutional variation at the level of communes. In this paper, I contribute to the discussion by emphasizing the role of micro-level institutions in shaping the take-up of the reform. First, it appears that lower participation rates might have reflected higher security of property rights, which had been determined at the lowest possible level – the one of an individual commune. The peasants of Simbirsk province tended to take advantage of the reform whenever they perceived their property rights as insecure. Second, my results suggest that privatization rates decreased whenever communal institutions successfully acted as a substitute for formal titling. In contrast, communes where repartitions did not adjust land holdings to family labor endowments displayed a higher demand for the reform.

This paper contributes to three major literatures. First, it adds to the literature studying the demand for formal institutions vis-a-vis traditional ones. In the seminal study of colonial Vietnam, Popkin (1979) has argued that Vietnamese peasants relied on the colonial institutions to counteract the influence of traditional village authorities and supported social movements that promised an alternative institutional structure. More recent research, spanning a variety of contexts, has demonstrated that citizens tend to rely on customary institutions if they lack confidence in state institutions (Lowes and Montero, 2021; Winters and Conroy-Krutz, 2021; Ribar, 2023). Similarly, traditional institutions are likely to be preferred, when customary authorities issue written titles and state does not (Ferree et al., 2023). It appears that the integration of traditional institutions into state institutional structure can increase the efficiency of public goods provision (Henn, 2022). However, if the state competes with customary authorities, it may provide underprivileged groups – such as farmers with weak connections to village elites in rural Africa (Honig, 2017) or women in post-war Chechnya (Lazarev, 2019) – with a legal means of protecting their rights even in the context of limited state reach.

The choice between formal and informal institutions in developing countries most often arises with respect to property rights. The literature that studies the popular demand for land reforms and titling programs suggests that an individual's decision to engage with the state often depends on the salience of local institutions and norms (Vendryes, 2014). For example, in Cameroon, where the land reform of 1974 faced a limited take-up in rural areas, many farmers who engaged with the reform by receiving concrete boundary markers on their land did not end up claiming a formal title (Firmin-Sellers and Sellers, 1999). While boundary markers did not have a legal bearing, they were recognized by village members as a sign of state-enforced property rights. As most land disputes were happening at the village level, obtaining a land titling on top of boundary markers has been considered as superfluous.

My paper contributes to both these literatures by highlighting the variation in the degree of substitution between state and customary institutions in the context of land reforms. When state and customary institutions are in conflict with each other, individuals tend to opt for the institutions that provide them higher expected returns when compared to an alternative. While I find that the demand for state-provided property rights increases when customary institutions exhibit an expropriation threat, I also show that the adoption of titling varies with the relative gain that the state brings about when compared to the pre-existing customary institutions.

Finally, this paper contributes to the literature studying rural institutions in the late

Russian Empire.[3] Focusing on serfdom – the institution deemed by many as responsible for the Russian backwardness – Markevich and Zhuravskaya (2018) find that its abolition in 1861 bolstered agricultural production in the subsequent pre-revolutionary decades. Similarly, Castaneda Dower and Markevich (2018) demonstrate that enclosures under the land reform of 1906, diminishing the importance of a peasant commune in rural life, increased agricultural productivity. The studies by Dennison (2011) and Nafziger (2010, 2016), employing household- and commune-level data, however, point to a substantial flexibility of rural institutions that did not prevent transactions on the local factor markets. Agreeing with these observations, my paper documents variation in local-level institutions and shows that this variation conditioned the adoption of modernizing reforms.

2 Historical background

2.1 Russian peasant commune

The emancipation of serfs in 1861 created the institutional framework that would shape peasant collective landownership in the Russian Empire. Prior to the emancipation, landowners, state, and the royal family enjoyed property rights on land. They, in turn, allotted land plots to peasants in exchange for quitrent payments or unpaid labor on a landowner's demesne. The emancipation law transferred property rights from former owners to peasants under buyout contracts financed by state loans. Although buyout contracts were signed individually, it was a peasant commune that the emancipation law vested with property rights on peasant land.[4] Communal landownership deprived newly emancipated peasants of the right to collaterize or sell their land plots for the next fifty years.

Peasant communes were first institutionalized as a form of rural self-government among peasants living on state land by the reform of 1837–41. The emancipation established peasant communes among serfs and royal peasants. The peasant commune, which usually comprised one large village or several smaller ones, was responsible for allocating and paying taxes, adjudicating conflicts, managing common resources, and regulating everyday peasant life. For example, communal agreement was required to take up work outside of the village or to perform household divisions. The heavily underbureaucratized Russian Empire relied on a peasant commune to govern roughly eighty percent of its population, at the same time restricting its own reach into communal affairs.

Peasant communes legally took two forms. In hereditary communes, which prevailed in modern-day Lithuania, Belarus, and the western part of Ukraine, land allotments passed down within the family across generations. Repartitional communes, widespread in the rest of the Russian Empire, in contrast, were endowed with a right to regularly redistribute land across households – in other words, to conduct a repartition (*peredel*) – when supported by a two-thirds majority at a communal assembly (*selsky skhod*).[5]

[3] Zhuravskaya et al. (2022) provide an excellent overview of the state-of-the-art within the field of the economic history of the Russian Empire.

[4] In Russian-language literature, the notions of *krestyanskaya obschina*, *selskoye obschestvo*, and *mir* have been used interchangeably to denote a peasant commune. While the laws of the Russian Empire employed the notion of *selskoye obschestvo* or a rural community, historical literature has been mostly using the notion of *krestyanskaya obschina* or a peasant commune.

[5] Table A1 in the Appendix lists the Russian versions of the historical terms mentioned in the paper along with their translation and explanation.

Map C2 in the Appendix demonstrates the distribution of repartitional communes across the provinces of the European part of the Empire.

While the law provided a broad framework shaping communal landownership, the practice of repartitioning was regulated within each individual commune. Historical literature agrees that, in general, repartitions intended to match land holdings with family labor resources; contemporaneous sources suggest that the primary reasons motivating a repartition were asymmetric demographic changes and migration leading to the accumulation of uncultivated land (Vorontsov, 1892). Communes, however, differed substantially in the frequency of repartitioning. Some communes stopped conducting repartitions after the abolition of serfdom; others would repartition as often as every three years (Nafziger, 2016).

Communal assemblies debated not only whether and when to conduct a repartition, but also how to allocate land across households. Alongside numerous local variations, communes approached land repartitioning in two main ways. Communes either redistributed land by the number of resident male family members or maintained the same size of a household plot as it was at the moment of the emancipation – repartitioning land by the number of revision souls (*dushi*, pl.), which corresponded to taxable male population at the emancipation of serfs in 1861.[6]

Prior to the emancipation, a tax census – or a revision (*reviziya*) – had been conducted every 15-20 years by the government to establish the sum of per capita peasant taxes. In state-owned villages, repartitions typically followed tax censuses in order to adjust land distribution to labor endowment across households. In the process of the emancipation, the amount of land transferred to peasants was determined according to the last tax census conducted in 1857–59. All taxable males – souls – were entitled with an allotment. After the emancipation, repartitions remained rare as long as the distribution of allotments corresponded to the composition of families, but demographic changes and an increase in land prices motivated the spike in repartitions and the discussions about an appropriate repartition rule in the late 1870-s – early 1880-s.

Different repartition rules were associated with differential gains and losses for different households; that, along with the decision of whether or not to conduct a repartition shaped the inner politics of a commune. In an attempt to address inequalities created by the current repartition, a new repartition was often sought. For example, in the village of Rovnoye in Samara province,

> *"One fraction has always sought to repartition by revision souls recorded in the last tax census; another one – by resident souls. Both fractions are by accident almost equal in size, and because the law requires two thirds of votes at a communal assembly for a repartition to be legal, the commune cannot reach an agreement for the second year in a row now..."* (Dietz, 1891)

Whether a commune would in fact conduct a repartition and what rule it would adopt, indeed, depended on the interplay of factors, such as the political influence and affluence of those opposing a new repartition, the ratio of the opponents to the advocates, and a

[6]Repartitioning by resident male family members often involved various age restrictions to make sure that allotments would be assigned taking into account the number of workers in a family. By the start of the twentieth century, some communes reportedly started to switch to repartitioning by the total number of residents – irrespective of gender (Kachorovsky, 1906). However, as a reader will see later, my sample includes almost none of such communes.

capacity for intra-communal negotiation (Vorontsov, 1892). Structural factors, such as the institutional legacy of serfdom, also played a role. In contrast to state- or crown-owned villages, serf owners did not conduct repartitions on a regular basis before the emancipation, making former serfs less likely to engage into repartitioning.

2.2 The Stolypin reform

At the turn of the twentieth century, the Russian Empire was a predominantly rural society with peasants comprising almost eighty percent of its total population. Long gone in Western Europe, communal landownership and open fields still permeated peasant agriculture. Peasant land was scattered into multiple unfenced strips across a communal field, enforcing adherence to a communally regulated rotation of crops and farming. It was precisely open fields and repartitions that the land reform of 1906 targeted.

The land reform of 1906, commonly known as the Stolypin reform after Prime Minister Petr Stolypin, aimed at enhancing the efficiency of peasant agriculture at multiple levels. First, it enabled peasants to apply for a private land title securing the land in current possession from future repartitions. Titled land could now be used as a collateral or sold to other peasants. Second, the reform allowed peasants to consolidate their land strips into a single plot. In both cases, the law absolved peasants from the hold of a commune; it provided peasants with a legal mechanism of overcoming communal resistance. With an agreement of two-thirds of a communal assembly, a commune could also conduct a village-wide consolidation.[7] In this paper, I will focus on the change in the land title.

To obtain a land title, a peasant would submit an application to a communal assembly.[8] The peasant could claim at no cost the amount of land he would get if a repartition was conducted at the moment of application. If he had extra land in current possession, it could be titled for a below-market price. Within a month, the communal assembly and the peasant had to negotiate the terms of privatization. If a negotiation failed and the commune turned down the application, a peasant had a right complain to an overseeing bureaucrat – a land captain (*zemsky nachalnik*) – who was empowered to issue a land title without the commune's consent. All land titles had to be submitted to and approved by the district peasant administration (district assembly or *uezdny syezd*).

Recent research has demonstrated that the Stolypin reform contributed to the rise of agricultural productivity and the development of the land and labor markets. Village-wide consolidations, by reducing coordination costs, yielded a positive effect on grain productivity and the inflow of agricultural machines (Castaneda Dower and Markevich, 2018). Having alleviated restrictions on non-agricultural employment for peasants, the reform also increased land liquidity and encouraging domestic mobility (Chernina et al., 2014). Privatization enabled peasants to sell their land allotments, helping them move to a city or other provinces of European Russia or Siberia.

By 1915 – the last year for which systematic data on the implementation of the reform have been published – around 2 million households across 39 provinces of the European

[7]The reform also included other forms of streamlining landownership, such as land consolidation under communal land tenure or the abolition of land interstripping between different communes or between communes and private landholders.

[8]Complete collection of laws of the Russian Empire. 28528. November 9, 1906.

part of the Russian Empire acquired land titles.[9] This constituted around 22% of the total number of households holding land in repartitional tenure. After accounting for households, who submitted but then withdrew their applications, most likely, under the pressure of fellow commune members, the share goes up to 27% (Davydov, 2022). There was a substantial variation in privatization rates across provinces that ranged from 3% to 55%. While no systematic data have been published by the imperial officials at a lower level of aggregation, it appears that micro-level variation might have been even more dramatic.

2.3 Peasant responses to the reform

The Stolypin reform created a legal means of protection for peasants whose land rights were facing the greatest risk from a commune. In a survey conducted in 1910–11 by the Free Economic Society – a non-government research organization – peasant respondents reported that villagers who would lose land in an upcoming redistribution, along with widows, the elderly, and migrants, showed the greatest demand for land titling.[10] For example, in communes that repartitioned land by the number of resident male family members, male deaths occurring between the two repartitions implied that a household would be entitled to a smaller plot during the next repartition. Similarly, peasants who ended up with land of higher-than-average quality in a communal field in the last repartition had an incentive to claim a title before a new repartition was announced by the commune.

Variation in communal institutions – the intensity of repartitioning and repartition rules – most likely shaped the perceived costs and benefits of land titling. Communes that held their land in repartitional tenure but did not practice repartitioning provided their members with more secure property rights on land. In such communes, obtaining a land title did not appear to bring about any tangible benefits – unless peasant sought to sell their allotments. A peasant from Ryazan province, who lived in a commune where no repartitions had been conducted after the emancipation, reported:

> *"The good farmer isn't even thinking about titling. He knows that land is already his. What is then the point of titling it? It's just the same land, it won't grow bigger."* (Chernyshov, 1917a)

Different repartition rules adopted in communes with active repartitions may have been another factor contributing to variation in the take-up of the reform. Communes that repartitioned land by the number of resident male family members provided insurance against economic and demographic shocks. Under labor and land market restrictions, communes that adjusted the number of allotments in response to increased fertility or mortality acted as a substitute for market (Nafziger, 2010). While the reform lifted most of the restrictions, peasants kept relying on the safety net provided by the repartitional institutions. A peasant from Saratov province reported:

> *"To my mind, communal landownership is better for our area... Upon every next repartition, land will be taken away from the dead and transferred to the newly born."* (Chernyshov, 1917b)

Communes that repartitioned land by the number of revision souls, maintaining the size of a land plot within a family, in contrast, provided weaker insurance and generated

[9] Data come from Central Statistical Committee (1916).
[10] The results of the survey are summarised in Chernyshov (1917a,b).

greater inequalities in the distribution of land across households, potentially making communal institutions less valuable to the members of a commune.

Historical sources suggest that returning migrants or first-mover privatizers sometimes induced other peasants to engage in preventive titling. Industrial migrants who had moved to cities before the reform often returned to their home communes to claim and sell a land plot.[11] Distributing land to returning migrants imposed cut-offs on other members of a commune. In the communes where the share of migrants was substantial, the members of the commune often preferred to privatize before migrants could raise their claims (Peshekhonov, 1909).

While the fear of returning migrants equally affected all types of the communes regardless of their institutional structure, the first-mover effect was likely to be observed only in the communes with active repartitions. Peasants who acquired land titles depleted a communal land pool that could be used for future repartitioning. The expected value of a future repartition for peasants remaining in the commune was declining with titled area and the quality of titled land, making second-movers more likely to privatize after first-movers did. Historical literature suggests that sometimes entire villages opted for preventive titling to preempt this type of dynamics (Pallot, 1999).

3 Data

Although the historical literature on the Stolypin reform seems to agree that the variation in communal institutions played an important role in shaping the demand for land titling (Pallot, 1999; Davydov, 2022), the lack of systematic micro-level data hindered the quantitative study of it. The official reports on the implementation of the reform, published annually by the Chief Administration of Agriculture and Land Engineering, reported data at the level of provinces, which could be easily equal in size to a small European country. Suffering from the lack of bureaucratic personnel and low informational capacity, the central government also struggled with collecting economic data at the communal level (Kotsonis, 2016). For both reasons, statistical work performed by some of the provincial governments (*zemstvo*) becomes the invaluable source for the study of a peasant commune.

For this paper, I digitized unique commune-level data on peasant participation in the Stolypin reform and communal institutions in Simbirsk province (*gubernia*), taking advantage of the household census of the peasant population conducted by the local *zemstvo* in 1910–11.[12] The household censuses were local initiatives uncoordinated by the central government and did not follow the same research program. The earliest censuses were conducted in the late 1870-s, and most provinces had run their censuses before the start of the reform. The Simbirsk census, conducted five years into the reform implementation, recorded both the number of land titles acquired under the reform and the features of communal institutions. From my sample, I excluded all communes that did not have any allotment land or registered population, which left me with 2,533 communes in 1,640 villages of Simbirsk province.

The outcome variable of interest is the share of communal allotments titled – or privatized – by 1911. For ten communes, data on the total number of allotments that

[11] Historical records suggest that peasants who travelled as far as to San Francisco rushed to claim their land plots after the reform was enacted with an intention of selling it (Zyrianov, 1992).

[12] Data for each district were published in a separate volume between 1913 and 1915. Data aggregated to the township level was published in Simbirsk Provincial Zemstvo (1913).

enter the denominator are missing. In Simbirsk province, on average, a commune assigned 1.7 allotments to a household, with 75% of communes assigning less than 2.3 allotments. The average allotment covered the area of 3.4 ha.[13]

Figure 1 demonstrates the distribution of land titling rates in Simbirsk province. The distribution is skewed to the right with around 30% of communes not reporting any titled allotments (colored with purple). The median of the distribution is 6%; however, excluding communes with zero privatized allotments, it increases to 16%. The distribution also shows a small spike at 100%, potentially reflecting the preventive titling mechanism discussed in Section 2.3. The average privatization rate is 17.6%. Figure 2 demonstrates the spatial distribution of titling rates aggregated to the level of villages.

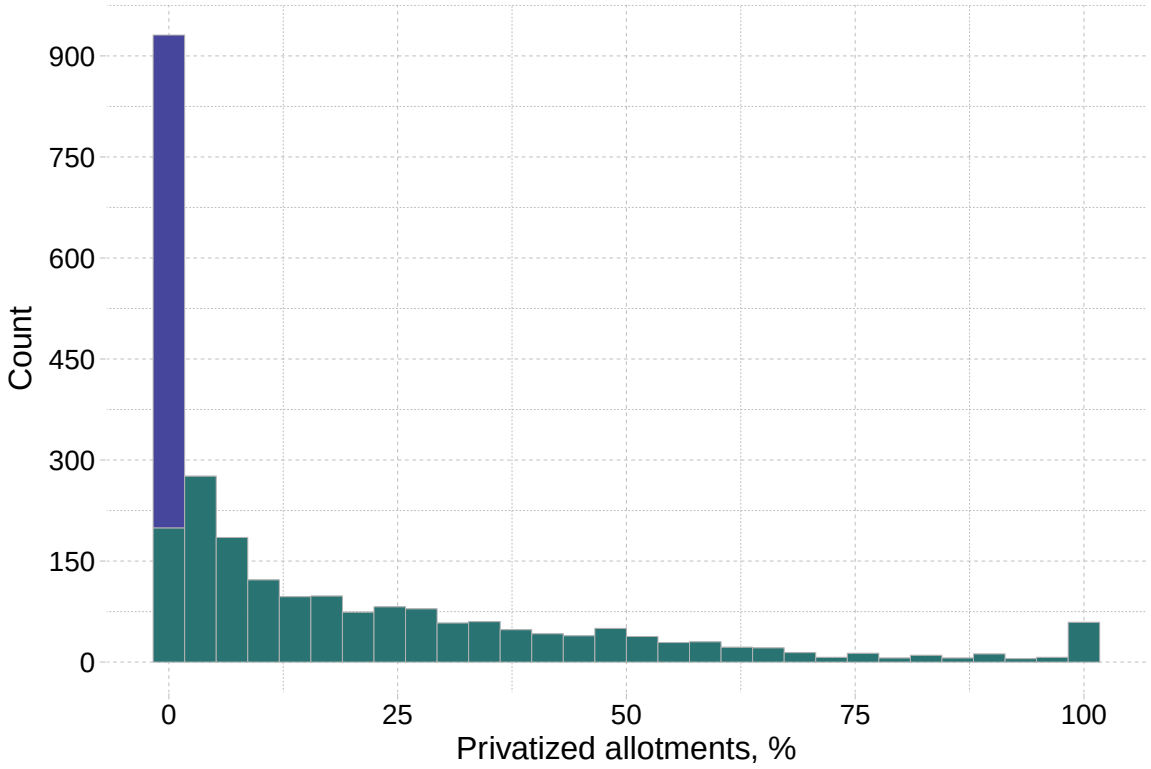

Figure 1: Land titling in Simbirsk province

Notes: The share of privatized (or titled) allotments across the communes of Simbirsk province by 1911. Communes with zero privatized allotments denoted with purple. Data cover 2,522 communes.

To capture the variation in communal institutions, I rely on the information about the intensity of repartitioning and a repartition rule. For each commune, the census provides data on the year of the most recent repartition. If a commune had at least one repartition after the abolition of serfdom, I classified it as a commune with active repartitions. I then created a dummy variable that takes a value of one if a commune allocated land across households by the number of resident male family members.

To characterize the incentives to claim a land title, I compiled data on the number of households in a commune, the share of migrant households, literacy rates, average allotment size, average family size, and the share of households with no working males from the Simbirsk census. It also reports the information about the pre-emancipation peasant group – namely, former serfs, state-owned or crown-owned peasants, a prevalent

[13]Figure C3a in the Appendix shows the distribution of the number of allotments per households across the communes of Simbirsk province. Figure C3b demonstrates the distribution of the average allotments size in hectares.

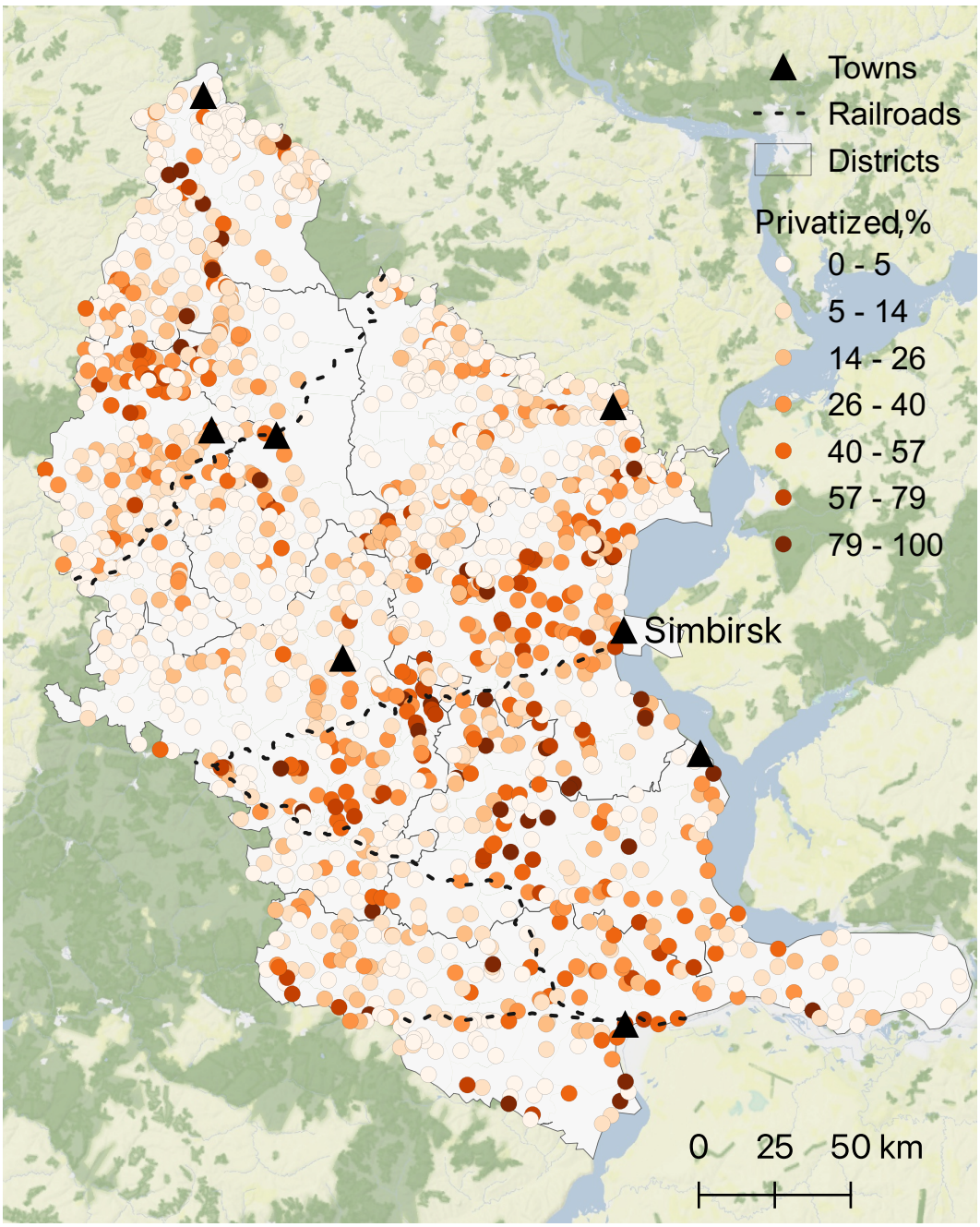

Figure 2: Privatized allotments, %

Notes: Map depicts the spatial distribution of land titling rates across the villages of Simbirsk province in 1911. Darker dotes denote higher titling rates. Black triangles represent towns; black dashed lines show the location of railroads in 1914.

ethnicity, and a prevalent soil type. To measure peasants' capacity for collective action, I collected data on the number of instances of peasant unrest against noble landowners during the Revolution of 1905–07 at the level of townships (*volost'*, an administrative unit between a village and a district) from Butaev et al. (1955).

To supplement my analysis with geographical data, I created a GIS shapefile of Simbirsk villages based on the topographic map of Simbirsk province compiled by Alexander Mende between 1859 and 1861. Out of 1,640 villages, I successfully geolocated 1,612. Using the shapefile, for each village, I computed the distances, in kilometers, to the centers of respective townships, the administrative centers of respective districts, and the nearest railroads. Since I lack information on the exact locations of communal fields,

I calculated the average terrain ruggedness and the share of forest landcover within a 10-km radius surrounding each village to account for environmental conditions using data from Shaver et al. (2019).[14] Table B1 in the Appendix reports the descriptive statistics for the variable used throughout the paper.

4 Peasant commune in Simbirsk province

The province of Simbirsk, located on the left bank of the Volga river, encompassed an area of 49.5 thousand squared kilometers, which is approximately equal to the area of present-day Slovakia. According to the 1897 Imperial Census, slightly more than 1,5 million people lived in eight administrative districts of the province. Ethnic Russians comprised around 68% of the provincial population; 88% were Orthodox.[15] Only 7% of the population lived in cities, which corresponds to the 25% percentile among 50 provinces of the European part of the Russian Empire.

Peasants constituted around 94% of the provincial population. The average commune in Simbirsk province comprised 126 households, with the population ranging from 1 to 1270 households. Roughly 99% of peasant communes formally held their land in repartitional tenure.[16] However, the practice of land repartitioning displayed substantial variation across the communes of Simbirsk province. Table 1 groups Simbirsk communes by the decade of the most recent repartition. Almost one third of 2,533 communes, for which data are available, reported no repartitions after the abolition of serfdom in 1861.

Most communes – around 60% – had their last repartition between 1892 and 1911. Within this period, 1894 and 1900 stand out in terms of both absolute numbers and relative increases (Figure C4 in the Appendix). The law of 1893 restricted the frequency of repartitions by the period of twelve years. In 1894, 102 communes had their most recent repartition, which constituted a five-fold increase compared to 1893. In 1900, a repartition was conducted in 151 communes, twice the number of 1899. The data do not show, however, a systematic increase in repartitions after the start of the land reform in 1906.

Table 2 contrasts the variation in repartition rules across the communes of Simbirsk province with average privatization rates under the 1906 reform. Around 40% of communes reallocated land holding by the number of male family members. Among these communes, around 10% imposed various age restrictions. The age restrictions can be considered as a reaction to high infant and child mortality, preventing households from acquiring land for children who would die soon.[17] Among communes that reported employing the number of male family members as a reallocation rule, only five did not practice land repartitions.

[14] According to Williams (2006), around 25% of peasants a distance of up to 5 *versts* ($\simeq$ 5 km) to reach their most remote strips, and around 60% of peasants 10 *versts* ($\simeq$ 10 km). As a robustness check, I also calculated terrain ruggedness and forest landcover within a 5-kilometer and a 15-kilometer radius.

[15] Mordvins, Chuvashs, and Tatarts constituted the most notable minorities in the province comprising 12%, 10%, and 9% of the population respectively. Mordvins and Chuvashs were predominantly Orthodox, and Tatarts Muslims.

[16] Data come from the landownership census conducted in 1905 (Central Statistical Committee, 1907).

[17] In 1900–03, the average infant mortality rate in Simbirsk province was 307 deaths per 1000 live births, which was higher than the average infant mortality rate of 260 across the European provinces of the Russian Empire (Natkhov and Vasilenok, 2022).

Table 1: Distribution by the year of the last repartition

	(1) Number of communes	(2) % of communes
No repartitions since 1861	810	32.0
1862–1871	9	0.4
1872–1881	29	1.1
1882–1891	119	4.7
1892–1901	779	30.8
1902–1911	769	30.4
Sum	2,515	99.2
Year unknown	7	0.3
Total	2,522	100

Source: The agricultural census conducted by the Simbirsk Provincial Zemstvo (1913) in 1910–11.

Table 2: Distribution by repartition rule

	(1) Number of communes	(2) % of communes	(3) Privatized, %
Revision souls	1,438	57.0	21.2
No repartitions	7,94	31.5	18.5
Active repartitions	642	25.5	24.5
Male family members	1,053	41.8	12.7
Males of all ages	941	37.3	11.7
Males over 18	81	3.2	21.4
No repartitions	5	0.2	10.9
Active repartitions	1043	41.4	12.7
Both genders	20	0.8	13.5
Hereditary	10	0.4	31.4
Sum	2,521	–	17.6
Rule unknown	1	0.04	–
Total	2,522	100	13

Source: The agricultural census conducted by the Simbirsk Provincial Zemstvo (1913) in 1910–11. Revision souls stand for male population figures recorded in the last pre-emancipation tax census of 1857–59. Grey rows show the subgroups of the white rows above. Column (3) reports sub-group means.

Around 57% of communes reported reallocating land by the number of revision souls – male population figures recorded in the last pre-emancipation tax census of 1857–59. Slightly more than a half of these communes reported no reallocations since 1861. In these communes, the practice of repartitioning died out after the abolition of serfdom. The remaining communes, which did adhere to the practice of repartitioning, constituted roughly one-fourth of all communes for which data on reallocation rules were available. In these communes, a family was entitled to the fixed area of a land holding defined at the abolition of serfdom, but strips that comprised the holding were

periodically reallocated within a communal field.[18]

Data suggest that communal institutions may have shaped the demand for the land titling. First, communes that repartitioned land by the number of revision souls displayed higher privatization rates than communes that repartitioned land by male family members. Second, privatization rates seem to be associated with the intensity of repartitioning. Conditional on the repartition rule, communes with active repartitions had higher privatization rates than communes with obsolete repartitions.

5 Empirical strategy

5.1 Baseline equation

To quantify the effect of communal institutions on the demand for land titling under the 1906 reform, I estimate the following equation:

$$\textit{Privatization, \%}_{ij} = \beta_0 + \beta_1 \textit{Male repartition rule}_{ij} + \beta_2 \textit{No repartitions}_{ij} + \boldsymbol{C\beta}_3 + \boldsymbol{G\beta}_4 + \mu_j + \varepsilon_{ij}, \quad (1)$$

In this equation, the outcome is the share of communal allotments privatized by 1911. As a robustness check, I employ a logarithmic transformation of titling rates, because the distribution of the original variable is highly skewed. The independent variables of interest, *Male repartition rule* and *No repartitions*, reflect the variation in communal institutions.

To compare communes that employed different repartition rules, I define *Male repartition rule* as a dummy variable that takes on a value of one if a commune repartitioned land holdings across households by the number of resident male family members. For a more straightforward comparison, I excluded twenty communes that repartitioned land by the number of family members of both genders from the sample.[19] In that case, the coefficient β_1 measures the average difference between communes that employed a male repartition rule and communes that repartitioned land by the number of revision souls, effectively keeping the area of a land plot constant across repartitions within the same family.

The second variable, *No repartitions*, captures the absence of a reallocation threat on part of the commune. I measure it as a dummy variable that takes a value of one if a commune never conducted a repartition after the abolition of serfdom.[20] In that case, the coefficient β_2 reflects the average difference in titling rates between communes that never had a repartition and communes that had at least one repartition.

[18] Figure C5 demonstrates the relationship between resident male population and communal allotments by a repartition rule. In communes that repartitioned land by male family members, dots follow the 45-degree line. In communes that repartitioned land by revision souls, however, the association falls below the 45-degree line, reflecting population growth since the late 1850-s. Figure C6 in the Appendix compares the number of allotments and and male population in 1859 for villages where all communes employed a revision repartition rule in 1911 (pre-emancipation population data are available only at the level of villages). Now, the dots also follow the 45-degree line.

[19] The results stay the same if I combine these communes with communes that repartitioned land by male family members.

[20] Table 1 shows that 38 communes had their last repartition between 1862 and 1881. One can speculate that a probability of these communes having another repartition is sufficiently small. If I redefine *No repartitions* encoding these communes as positives, the results stay the same.

The commune covariates $\boldsymbol{C}$ include commune population in households, average allotment size, average family size, the share of households with no working males, the share of migrant households residing outside of a commune, literacy rates, a dummy for ethnic Russians, a dummy for former serfs, and a dummy for peasant unrest during the Revolution of 1905–07 measured at the township level. The set of geographic covariates $\boldsymbol{G}$ includes a dummy for chernozem soils, average ruggedness, the share of forest landcover, and the distances to the township centers, to the district towns, and to the nearest railroad.

Unobserved district-level heterogeneity – for example, bureaucratic efficiency in reform implementation varying across district administrations – is captured by district fixed effects μ_j. Throughout the paper, standard errors are adjusted for spatial autocorrelation within 10 km following Conley (1999).

Historical literature suggests that some communes engaged into strategic repartitioning after the start of the reform to prevent their members, who would benefit the most from the reform under the current land allocation, from titling (Pallot, 1999). In Simbirsk province, around 16% of communes conducted their last repartition after 1906. To make sure that the measures of communal institutions do not depend on the outcome, throughout the paper, I present the results of estimating Equation 1 on the reduced sample.

5.2 Mechanisms

Next, I attempt to uncover the mechanisms relating communal institutions to the demand for land titling. First, I expect that different repartition rules generated different land distributions. Land reallocation by the number of resident male family members adjusted land holdings by family structure, which, in turn, reduced inequalities in access to land and decreased the expected pay-off from land titling. In contrast, the absence of family structure adjustment that fixed the size of a land holding assigned at the emancipation in 1861 did not take into account family-level demographic changes and generated higher inequalities in land distribution.

To examine the association between reallocation rules and access to land, I estimate the equation below:

$$\begin{aligned} \textit{Households w/o land, \%}_{ij} = \alpha_0 + \alpha_1 \textit{Male repartition rule}_{ij} + \alpha_2 \textit{No repartitions}_{ij} + \\ \alpha_3 \textit{Land}_{ij} + \alpha_4 \textit{Population}_{ij} + \boldsymbol{X}\boldsymbol{\alpha_5} + \mu_j + \epsilon_{ij}, \quad (2) \end{aligned}$$

As an outcome, I use the share of households that were not allotted any communal land. I expect that communes that employed a male repartition rule had fewer households without access to communal land than communes that repartitioned land by the number of revision souls, that is, the coefficient α_1 must be negative. I control for the absence of repartitions *No repartitions*, the size of a communal field *Land*, the size of a commune in households *Population*. The set of controls $\boldsymbol{X}$ includes the shares of migrant households and households with no working males, as the historical sources suggest that communes repartitioned land of migrants and widows among the resident members of a commune, dummies for former serfs and ethnic Russians, distances to the township centers, the district administrative centers, and the nearest railroad, a dummy for chernozem soil, average ruggedness, and the share of forest landcover.

Second, I hypothesize that the practice of land reallocations posed an expropriation threat and increased the expected peasants' pay-off from land titling. To test for this

mechanism, I take advantage of the 1893 imperial law that limited the frequency of repartitions to at least twelve years and estimate the following equation:

$$\begin{aligned} \textit{Privatization, \%}_{ij} = \gamma_0 + \gamma_1 \textit{Years since the last repartition}_{ij} + \\ \gamma_2 \textit{Less than } t \textit{ years ago}_{ij} + \\ \gamma_3 \textit{Interaction}_{ij} + \boldsymbol{X}\boldsymbol{\gamma}_4 + \mu_j + \nu_{ij}, \quad (3) \end{aligned}$$

I first compute the difference, in years, between the year of the last repartition and 1911, *Years since the last repartition*. The smaller values of the variable imply that a commune had conducted a repartition more recently. I then create a dummy variable, *Less than t years ago*, that takes on a value of one if *Years since the last repartition* does not exceed t. When $t = 12$, *Less than t years ago* describes if a commune had already acquired a legal right to conduct a new repartition and could potentially hold it at any moment. When the variable is equal to one, a commune did not yet cross the threshold and could not conduct a new repartition under the 1893 law.

If peasants did in fact consider repartitions as an expropriation threat, it can be expected that privatization rates increased around the twelve-year threshold and decreased in both directions. The interaction between the two variables allows for the change in the effect of time on titling rates around the threshold. The average marginal effect for the communes that did not yet cross the threshold (*Less than t years ago*$= 1$) must be negative, and for the communes that did positive. As a placebo test, I examine the alternative values of t. The set of controls $\boldsymbol{X}$ follows Equation 1.

6 Results

6.1 Non-institutional correlates of land titling

Before I turn to discuss how communal institutions shaped the demand for land titling in Simbirsk province, I examine whether potential economic benefits from privatizing incentivized land titling. Figure 3 reports the standardized coefficients from estimating Equation 1, suggesting that privatization rates were increasing with labor mobility, proximity to cities, and more favorable agroclimatic conditions.

First, migration is positively and significantly associated with land titling, which agrees with the recent findings by Chernina et al. (2014). A 10 percentage points increase in the share of migrant households is associated with a roughly 2 percentage points increase in privatization rates. Although the available data do not allow to distinguish between pre- and post-reform migrants, historical records indicate that both both contributed to the demand for land titling, with earlier migrants seeking to claim and sell the land to which they were entitled and prospective migrants to accumulate resources and oped a door for future migration. Table B2 in the Appendix demonstrates that the share of privatized allotments sold after the start of the reform was higher in the communes with a larger migrant population. The results also suggest that privatization rates were rising in the proximity of a district town, potentially emphasizing the role of the availability of non-agricultural employment in driving the demand for land titling. The coefficient on the distance to the district town is negative and significant at the 5% level.

It appears that worse agricultural land contained the demand for land titling. Terrain ruggedness and the share of forest landcover are both negatively associated with

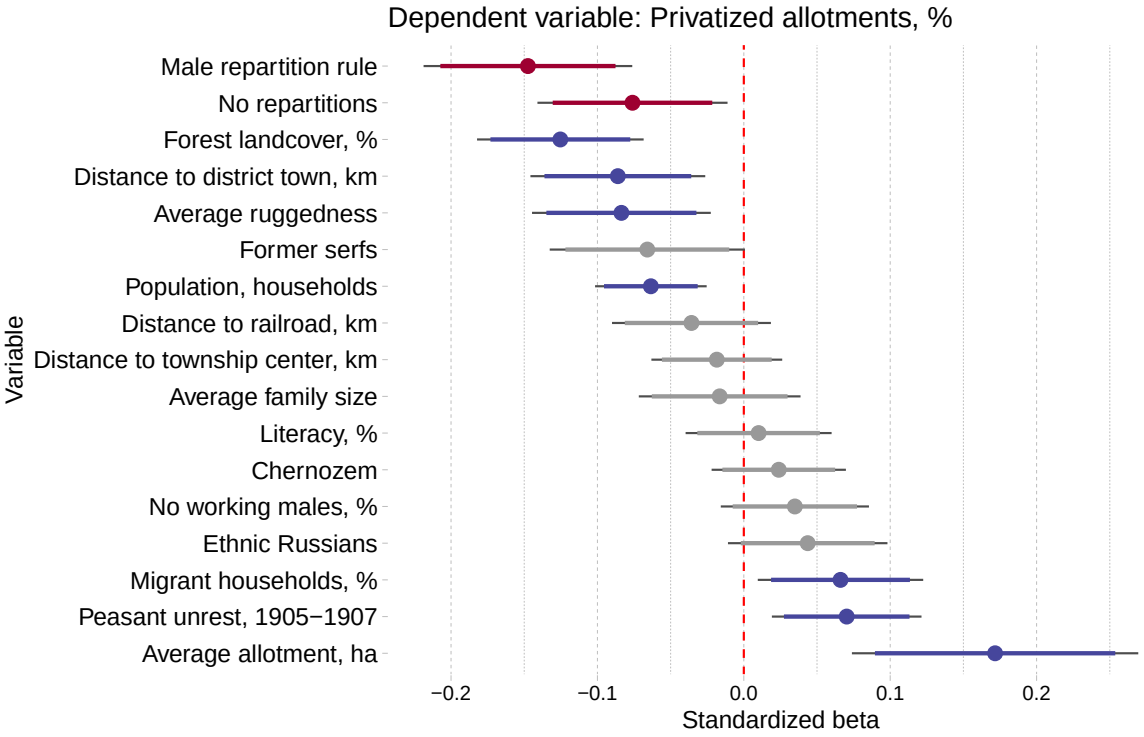

Figure 3: Privatized allotments and communal institutions

Notes: Standardized coefficients from Equation 1 with 95% and 90% confidence intervals (thick and thin lines respectively). Estimates insignificant at the 95% level in gray. Standard errors clustered at the level of village.

privatization rates. The negative association can be potentially attributed either to a higher importance of communal institutions to agricultural production in harsher environmental conditions or to lower land prices. Similarly, the coefficient on *Chernozem*, a dummy variable indicating the presence of the most fertile soil type in the region, is positive, although the estimate is not precise.

The size of a commune is negatively and significantly associated with land titling, suggesting that communes with a larger number of residing households displayed lower privatization rates. This result may suggest that reaching an agreement between a privatizing peasant and a commune was easier in smaller communes. Privatization rates were higher in townships that experienced peasant unrest during the 1905–1907 Revolution, potentially reflecting a higher capacity for collective action facilitating intra-communal agreement or stronger demands for political and economic change.

Finally, the results provide suggestive evidence in favor of the historical narrative that considers the households who could lose land in an upcoming redistribution – such as widows, the elderly, and households that experienced a demographic shock after the last repartition – as potential winners of the reforms. The coefficient on the share of households with no male family members of working age is positive but was not estimated precisely. However, it becomes significant at the 5% level in the specification where I take the logarithm of a dependent variable.[21]

[21] The results are reported in Table B4 in the Appendix.

6.2 Communal institutions and land titling

Table 3 focuses on the association between different communal institutions and the demand for land titling. Column (1) examines the relationship between privatization rates, on the left-hand side, and dummies for a male repartition rule and the absence of repartitions, on the right-hand side. Column (2) controls for the characteristrics of a commune. Column (3) adds the set of geographic controls. Column (4) includes district fixed effects. In Column (5), I re-estimate Equation 1 excluding the communes that conducted their last repartition in 1907-1911, the years of the reform implementation. Standard errors adjusted to spatial correlation within a 10-km radius are reported in parentheses. Table B3 in the Appendix reports the full set of controls.

Table 3: Privatized allotments and communal institutions

	Dependent variable:				
	Privatized allotments, %				
	(1)	(2)	(3)	(4)	(5)
Male repartition rule	-11.171^{***}	-6.746^{***}	-6.979^{***}	-7.271^{***}	-7.728^{***}
	(1.952)	(2.006)	(1.947)	(1.874)	(1.914)
No repartitions	-5.631^{***}	-5.092^{**}	-5.462^{***}	-3.997^{**}	-3.795^{*}
	(2.043)	(1.980)	(1.888)	(1.890)	(1.983)
Sample	Full	Full	Full	Full	<1907
Commune controls		✓	✓	✓	✓
Geographic controls			✓	✓	✓
District fixed effects				✓	✓
Mean of dependent variable	17.7	17.7	17.7	17.7	18.0
SD of dependent variable	24.4	24.4	24.4	24.4	23.8
Observations	2,411	2,411	2,411	2,411	2,025
Adjusted R^2	0.045	0.108	0.134	0.148	0.130

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable is the percentage of allotments privatized by 1911. The set of commune controls includes average allotment size, average family size, the share of households with no working male members, the number of households in a commune, the share of migrants, literacy rates, dummies for former serfs and predominantly Russian population, and a dummy for peasant unrest in 1905–1907 at the township level. The set of geographic controls adds a dummy for chernozem soil, distances to the township center, the district administrative center, and the nearest railroad, average ruggedness, and the share of forest landcover. All specifications control for the number of allotments per landed household. Standard errors, adjusted to spatial correlation within 10 km following Conley (1999), in parentheses.
*p<0.1; **p<0.05; ***p<0.01

The results suggest that both the choice of a repartition rule and the intensity of repartitioning played an important role in shaping the demand for land titling. First, across all specifications, peasants living in communes that repartitioned land by the number of resident male family members displayed a lower demand for land titling than communes that repartitioned land fixing the amount of land within a family, controlling for active reallocations. The coefficient on *Male repartition rule* is negative and strongly significant across all specifications. On average, privatization rates in communes that employed a male repartition rule were 7 percentage points lower than in communes that employed a revision repartition rule.

Second, the results indicate that communes that did not practice repartitioning exhib-

ited significantly lower privatization rates than communes that had conducted at least one repartition after the abolition of serfdom. In the full specification reported in Column (4), the difference in privatization rates between communes that did and did not practice repartitioning was around 4 percentage points. The magnitude of the effect seems substantial when compared to the sample average of around 18%. This result suggests that the adoption of land titling in communes with more secured property rights did not bring about the same gains relative to the *status quo* as in communes where peasants constantly experienced expropriation threat posed by an upcoming repartition.

To examine the robustness of inference to the value of a spatial bandwidth, I adjust standard errors to spatial autocorrelation with the bandwidth ranging from 4 to 50 km. The coefficient on *Male repartition rule* remains significant at the 5% level across all values of a bandwidth. The coefficient on *No repartition* turns out to be less robust; the coefficient is significant at the 5% level within 14 km and at the 10% level within 32 km (see Figure C7 in the Appendix). For comparison, the average distance to a district center is 43 km across the entire sample.

The strategic repartition conducted by a commune after the start of the reform implementation could discourage the households, who would gained from the reform, from titling. In my sample, 389 communes had their last repartition after 1906. To mitigate the concerns of endogeneity, Column (5) excludes such communes from the sample. The coefficients on both variables of interest retain their signs. The coefficient on *Male repartition rule* remains highly significant and increases in magnitude. The coefficient on *No repartitions*, however, becomes significant at the 10% level with a slight decrease in magnitude.

The distribution of titling rates is skewed and has a long right tail (See Figure 1). To examine the robustness of my results to the functional form, I employ the natural logarithm of titling rates as a dependent variable and report the results in Table B4. The results stay the same; the coefficients on both variables, *Male repartition rule* and *No repartitions*, are negative and significant at the 1% and 5% levels respectively.

By 1911, in approximately one-third of all communes, no households had acquired a land title. To examine if communal institutions were driving a first-mover decision to engage with a reform, I re-estimate Equation 1 by dichotomizing the outcome and classifying all communes that reported at least one privatized allotment as positives. Table B5 in the Appendix reports the results. It appears that, for first-movers, the intensity of repartitioning was a more important factor than a repartition rule. Across all specifications, the coefficient on *No repartitions* is negative and highly significant. In the full specification, the difference in the probability that at least one member of a commune acquired a land title between communes that did and did not conduct repartitions is 0.11. In contrast, the coefficient on *Male repartition rule* is no longer significant with an exception of Column (4), where it becomes significant at the 90% level.

6.3 Mechanisms

In this section, I will attempt to uncover incentives created by different types of communal institutions. First, I examine whether a male repartition rule, under which land holdings were adjusted to family labor endowment, resulted in lower levels of land inequality than a repartition rule that fixed a land plot size within a family. As the

measure of land inequality, I employ the share of households that had not been allotted any communal land from the Simbirsk census. To account for the available resources and population pressure, I control for the size of a communal field and the number of households in a commune. I also control for the share of migrant households and families with no working males, because communes used to split the land of migrants and widows among the resident households.

Table 4: Communal institutions and land distribution

	Dependent variable:			
	Households without land, %			
	(1)	(2)	(3)	(4)
Male repartition rule	-12.310^{***}	-12.153^{***}	-6.590^{***}	-5.237^{***}
	(0.833)	(0.866)	(0.724)	(0.713)
No repartition	-1.928^{*}	-2.014^{**}	-0.701	1.025
	(0.987)	(0.982)	(0.833)	(0.832)
Total land, ha		-0.233^{***}	-0.192^{***}	-0.214^{***}
		(0.055)	(0.048)	(0.047)
Population, households		0.014^{***}	0.012^{***}	0.012^{***}
		(0.004)	(0.003)	(0.003)
Controls			✓	✓
District fixed effects				✓
Mean of dependent variable	12.9	12.9	12.9	12.9
SD of dependent variable	12.9	12.9	12.9	12.9
Observations	2,411	2,411	2,411	2,411
Adjusted R^2	0.190	0.196	0.398	0.430

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable is the share of households that did not have any allotted land in 1911. The set of controls includes the share of migrants, the share of households with no working males, dummies for former serfs and predominantly Russian population, a dummy for chernozem soil, distances to the township center, the district administrative center, and the nearest railroad, average ruggedness, and the share of forest landcover. Standard errors, adjusted to spatial correlation within 10 km following Conley (1999), in parentheses.
*p<0.1; **p<0.05; ***p<0.01

Table 4 reports the results of estimating Equation 2. Across all specifications, the coefficient on *Male repartition rule* is negative and highly significant. In the full specification, reported in Column (4), the share of households without communal land was around 5 percentage points lower in communes that employed a male repartition rule than in communes that repartitioned land fixing a land plot size withing a family. In terms of real measures, the coefficient is approximately equal to the difference between the median and the 20% percentile of the distribution of the outcome variable. The results stay the same if I exclude the communes that conducted a repartition after the start of the reform or if I re-estimate the equation on a subsample of the communes that actively practiced repartitioning.

Even though I cannot directly examine the differences in land distribution across households in communes that employed different repartition rules due to the absence of

communal-level data, my results suggest that communes employing a male repartition rule did provide their members with better access to land. It appears that, in such communes, repartitions functioned as a form of social insurance, being highly valued by peasants.

Second, I examine if higher titling rates in communes that practiced land reallocations were driven by the weaker security of property rights. To do so, I take advantage of the 1893 law that limited the frequency of repartitions to at least twelve years and ask if privatization rates were increasing around the twelve-year threshold. To illustrate the logic behind the empirical excercise that follows, Figure 4 shows an unconditional scatter plot between the year of the most recent repartition and titling rates. It appears that the share of privatized allotments increases as communes approach the twelve-years threshold.

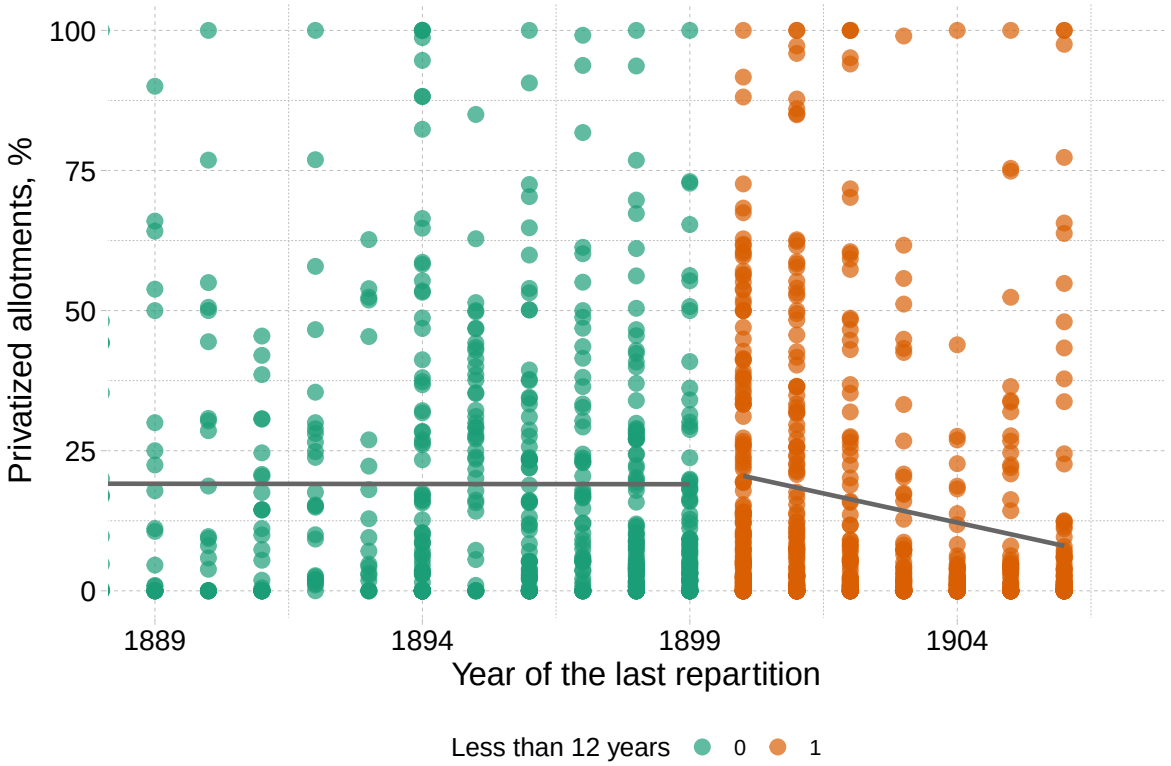

Figure 4: Privatized allotments and a reallocation threat

Notes: Unconditional scatter plot between the share of privatized allotments and the year of the last repartition. Orange dots denote the communes that had conducted their last repartition less than twelve years ago, and green dots more than twelve years ago.

Table 5 presents the results from estimating Equation 3. The first row reports the average marginal effect of time elapsed since the most recent repartition for communes that had conducted their last repartition more than twelve years ago, and the second row for communes that had conducted their last repartition less than twelve years ago. Columns (1) and (2) employ the twelve-year threshold introduced by the 1893 law, whereas Columns (3) and (4) use the threshold of $t = 8$ as a placebo test. Columns (1) and (3) rely on the entire sample, whereas Columns (2) and (4) exclude all the communes that conducted their last repartition after 1906 to mitigate the concerns of strategic repartitioning.

For communes that had conducted their last repartition more than twelve years ago, titling rates are increasing when communes approach the twelve-year threshold. The

Table 5: Privatized allotments and communal institutions

	Dependent variable:			
	Privatized allotments, %			
	$t = 12$		$t = 8$	
	(1)	(2)	(3)	(4)
Years since the last repartition	0.126**	0.113*	0.103*	0.096*
& Last repartition more than t years ago	(0.057)	(0.058)	(0.053)	(0.055)
Years since the last repartition	−0.003	−0.962**	0.917**	1.306
& Last repartition less than t years ago	(0.234)	(0.427)	(0.410)	(1.406)
Sample	Full	< 1907	Full	< 1907
Full set of controls	✓	✓	✓	✓
District fixed effects	✓	✓	✓	✓
Mean of dependent variable	17.7	18.0	17.7	18.0
SD of dependent variable	24.4	23.8	24.4	23.8
Observations	2,411	2,025	2,411	2,025
Adjusted R^2	0.148	0.132	0.149	0.132

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable indicates if at one member of the commune acquired a land title by 1911. The set of controls includes average allotment size, average family size, the share of households with no working male members, the number of households in a commune, the share of migrants, literacy rates, dummies for former serfs and predominantly Russian population, a dummy for peasant unrest in 1905–1907 at the township level, a dummy for chernozem soil, distances to the township center, the district administrative center, and the nearest railroad, average ruggedness, and the share of forest landcover. All specifications control for the number of allotments per landed household. Standard errors, adjusted to spatial correlation within 10 km following Conley (1999), in parentheses.
*p<0.1; **p<0.05; ***p<0.01

further a commune is from this threshold, the lower the titling rates tend to be. In contrast, for communes that had their last repartition less than twelve years, titling rates peak around the twelve-year threshold and decrease in communes with more recent repartitions. Taken together, these results suggest that the demand for land titling was lower when property rights were perceived as the most secure – either immediately after a repartition or in the communes that did not have a repartition for an extended period of time.

The historical narrative, however, suggest that not all communes complied with the 1893 law. For example, in the Simbirsk census, 64 communes (2.5% of all communes) reported conducting repartitions annually, implying that the distance to the twelve-year threshold is likely a noisy measure of property rights security. For this reason I prefer the results from the specification where I exclude communes that conducted the repartition after the reform, reported in Column (2). I also re-run the regressions excluding communes with annual repartitions (not reported), and the results do not change. The same patterns do not replicate, however, when I use the eight-year threshold. Both average marginal effects are positive and significant on the full sample reported in Column (3), and positive but insigificant on the reduced sample reported in Column (4).

7 Discussion and conclusions

Around the globe, formal institutions widely coexist and often compete with customary institutions. In some parts of the world, modernizing reforms, such as the introduction of land titles, often face moderate demand (Vendryes, 2014). In others, customary institutions, for example, hereditary chiefs, are gaining importance even in the democratic systems (Baldwin, 2015). Addressing this puzzle, scholars have focused on the nature of formal institutions, suggesting that individuals will prefer customary institutions when an alternative is a weak or corrupt state or when a state might threaten customary privilege enforced by customary institutions (Honig, 2017; Lazarev, 2019; Winters and Conroy-Krutz, 2021). In this paper, relying on the historical case of the 1906 land reform in the Russian Empire, I agrue that the success of modernizing reforms depends on the nature of pre-existing customary institutions and their performance relative to the alternative.

Prior to the reform, agricultural land in the Russian Empire was owned collectively by a peasant commune and, in some regions, legally subject to periodic reallocation – or repartition – across households, restricting labor mobility and discouraging investment in land improvement. The reform provided peasants with a legal right to title land plots they were farming, securing land from a future reallocation and enabling peasants to collaterize or sell newly privatized plots. Relying on newly digitized commune-level data from the province of Simbirsk in the southeastern part of European Russia in 1910–11, I uncover dramatic variation in customary institutions that governed landownership. Communes that did practice land reallocation differed with respect to a repartition rule they employed, whereas around one third of all communes did not conduct reallocations at all.

I find that the demand for land titling varied across the types of communes. Communes that practiced land reallocation displayed higher titling rates than non-repartitional communes with more secure property rights, and titling rates seemed to increase when peasants anticipated a new reallocation. Moreover, communes that allocated land according to the number of residing male family members, on average, displayed lower titling rates than communes that did fixed a land plot size assigned at the emancipation in 1861 within a family.

I further show that employing a male repartition rule improved access to land for the members of a commune. Therefore, the adjustment of land holdings to available family labor resources created a safety net that would be lost upon acquiring a formal title. This safety net proved especially important in the times of economic shocks and uncertainty; Dower and Markevich (2018) find that mass mobilization during the World War I affected agricultural production on communal land to a lesser extent than on private farms. When this safety net was absent, the demand for land titling increased.

Deciding upon land titling, peasants weigh benefits of a new institutional arrangement against costs of losing access to the old one. Holding constant access to markets and the availability of non-agricultural employment, both benefits and costs of acquiring a land title seem low in non-repartitional communes. In communes that reallocated land by the number of male family members, peasants could have derived high benefits from securing land against future reallocation by acquiring a title, which also entail a high cost of giving up access to social insurance in the absence of functional labor and land markets. Communes that engaged in land reallocation but fixed a land plot size within a family, however, did not equalize access to land but did impose a reallocation

threat, making benefits of formal titling outweigh its costs.

Disregard to local institutional contexts in designing and implementing modernizing reforms can lead to unexpected results or even misleading conclusions when assessing their success. For example, in Cameroon, while a large percentage of the population did not end up claiming a formal title under the land reform of 1974, Firmin-Sellers and Sellers (1999) demonstrate that the reform did nevertheless increase the security of farmers' property rights by invoking and interacting with customary laws that regulated land tenure. In a similar vein, I argue that variation in customary institutions, overlooked by the designers of the 1906 reform, conditioned peasants' incentives to claim a land title.

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Appendix

A Dictionary

Table A1: Translation of historical terms

Term in Russian	Term in English	Description
Gubernia	Province	Principal administrative unit in the Russian Empire
Uezd	District	Administrative subunit of a province
Volost'	Township	Administrative subunit of a district; encompassed only peasant population
Obschina	Commune	Peasant self-government institution; usually comprised one large village or several smaller ones
Selsky skhod	Communal assembly	Assembly of household heads in a commune
Selsky starosta	Communal headman	Primary communal official
Zemsky nachalnik	Land captain	Governmental official overseeing multiple townships
Uezdny syezd	District assembly	District peasant administration overseeing land capitains
Zemstvo	Local self-government	Elected assembly with the power to assess taxes and allocate revenues to fund public goods; established in 1864
Peredel	Repartition	Redistribution of land allotments among households of a commune
Dusha (*dushi*, pl.)	Soul	Before the abolition of serfdom, a taxable male; afterwards, a unit of land repartition
Reviziya	Revision	Before the abolition of serfdom, a tax census conducted to establish the sum of per capita peasant taxes

B Tables

Table B1: Descriptive statistics

Variable	**Mean**	**Std. Dev.**	**Min**	**Max**	**N**
Privatized allotments, %	17.60	24.33	0	100	2,522
Privatized allotments, dummy	0.71	0.45	0	1	2,522
No repartitions	0.32	0.47	0	1	2515
Years since the last repartition	23.21	19.48	0	108	2,515
Male repartition rule	0.42	0.49	0	1	2,521
Population, households	126.32	163.13	1	1,270	2,533
Average family size	5.60	0.94	1	12	2,533
Average allotment, ha	3.38	2.97	0	60.33	2,523
No working males, %	8.42	7.67	0	100	2,533
Migrant households, %	13.45	12.16	0	100	2,533
Literacy, %	14.81	8.12	0	73.01	2,533
Ethnic Russians	0.80	0.40	0	1	2,533
Former serfs	0.62	0.49	0	1	2,533
Peasant unrest, 1905−1907	0.54	0.50	0	1	2,533
Chernozem	0.17	0.38	0	1	2,515
Average ruggedness	47.22	4.03	36.99	56.73	2,497
Forest landcover, %	28.56	8.13	10	42.80	2,497
Distance to township center, km	7.10	5.60	0	42.68	2,512
Distance to district town, km	43.25	23.30	0	119.69	2,497
Distance to railroad, km	31.60	24.85	0	118.91	2,497
Households without land, %	13.10	13.26	0	91.67	2,533
Total land, ten ha	73.25	112.30	0.05	1,125.9	2,533
Sold allotments, % of privatized	15.01	26.97	0	100	1,790

Table B2: Sold allotments and migration

	Dependent variable:			
	Sold allotments, %			
	(1)	(2)	(3)	(4)
Migrant households, %	0.554***	0.554***	0.562***	0.440***
	(0.075)	(0.075)	(0.075)	(0.076)
Literacy, %		0.216**	0.244**	0.260**
		(0.101)	(0.104)	(0.103)
Privatized allotments, %	✓	✓	✓	✓
Geographic controls			✓	✓
District fixed effects				✓
Mean of dependent variable	15.1	15.1	15.1	15.1
SD of dependent variable	27.0	27.0	27.0	27.0
Observations	1,743	1,743	1,743	1,743
Adjusted R^2	0.119	0.122	0.126	0.152

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable is the share of privatized allotments sold by 1911. The set of geographic controls includes the dummy for chernozem soil, average ruggedness, and the share of forest landcover. Distances are the distances to the township center, the district administrative center, and the nearest railroad. Standard errors, clustered at the level of villages, in parentheses.
*p<0.1; **p<0.05; ***p<0.01

Table B3: Privatized allotments and communal institutions

	Dependent variable:				
	Privatized allotments, %				
	(1)	(2)	(3)	(4)	(5)
Male repartition rule	−11.171***	−6.746***	−6.979***	−7.271***	−7.728***
	(1.952)	(2.006)	(1.947)	(1.874)	(1.914)
No repartitions	−5.631***	−5.092**	−5.462***	−3.997**	−3.795*
	(2.043)	(1.980)	(1.888)	(1.890)	(1.983)
Average allotment, ha		1.597***	1.592***	1.413***	1.229***
		(0.472)	(0.432)	(0.406)	(0.366)
Average family size		−1.013	−1.189	−0.441	0.062
		(0.776)	(0.771)	(0.794)	(0.813)
No working males, %		0.125	0.103	0.124	0.074
		(0.093)	(0.089)	(0.092)	(0.089)
Population, households		−0.008**	−0.007**	−0.009***	−0.007**
		(0.003)	(0.003)	(0.003)	(0.003)
Migrant households, %		0.139**	0.113*	0.138**	0.141**
		(0.062)	(0.061)	(0.063)	(0.069)
Literacy, %		0.043	0.050	0.031	0.074
		(0.091)	(0.083)	(0.082)	(0.087)
Ethnic Russians		5.000***	5.171***	2.624	1.716
		(1.894)	(1.972)	(2.020)	(2.098)
Former serfs		−2.211	−2.106	−3.308*	−3.504*
		(1.801)	(1.748)	(1.741)	(1.804)
Peasant unrest, 1905-1907		4.879***	3.778***	3.440**	2.995**
		(1.387)	(1.294)	(1.354)	(1.399)
Chernozem			−0.796	1.586	2.780
			(1.614)	(1.842)	(1.875)
Average ruggedness			−0.216***	−0.180**	−0.156**
			(0.061)	(0.074)	(0.075)
Forest landcover, %			−0.169***	−0.157***	−0.171***
			(0.035)	(0.040)	(0.043)
Distance to township center, km			−0.042	−0.082	−0.039
			(0.104)	(0.104)	(0.113)
Distance to district town, km			−0.022	−0.077***	−0.050
			(0.024)	(0.030)	(0.031)
Distance to railroad, km			−0.093***	−0.041	−0.032
			(0.030)	(0.037)	(0.042)
Sample	Full	Full	Full	Full	< 1907
District fixed effects				✓	✓
Mean of dependent variable	17.7	17.7	17.7	17.7	18.0
SD of dependent variable	24.4	24.4	24.4	24.4	23.8
Observations	2,411	2,411	2,411	2,411	2,025
Adjusted R^2	0.045	0.108	0.134	0.148	0.130

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable is the share of allotments privatized by 1911. All specifications control for the number of allotments per landed household. Standard errors, adjusted to spatial correlation within 10 km following Conley (1999), in parentheses.
*p<0.1; **p<0.05; ***p<0.01

Table B4: Privatized allotments and communal institutions; logarithm of a dependent variable

	Dependent variable:				
	log Privatized allotments, %				
	(1)	(2)	(3)	(4)	(5)
Male repartition rule	-0.563^{***}	-0.391^{***}	-0.412^{***}	-0.489^{***}	-0.485^{***}
	(0.121)	(0.125)	(0.120)	(0.118)	(0.118)
No repartitions	-0.306^{**}	-0.270^{**}	-0.305^{***}	-0.294^{**}	-0.315^{**}
	(0.131)	(0.126)	(0.118)	(0.119)	(0.127)
Sample	Full	Full	Full	Full	$<$ 1907
Commune controls		✓	✓	✓	✓
Geographic controls			✓	✓	✓
District fixed effects				✓	✓
Mean of dependent variable	1.91	1.91	1.91	1.91	1.95
SD of dependent variable	1.57	1.57	1.57	1.57	1.56
Observations	2,411	2,411	2,411	2,411	2,025
Adjusted R^2	0.036	0.091	0.120	0.134	0.122

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable is a logarithm of the percentage of allotments privatized by 1911. The set of commune controls includes average allotment size, average family size, the share of households with no working male members, the number of households in a commune, the share of migrants, literacy rates, dummies for former serfs and predominantly Russian population, and a dummy for peasant unrest in 1905–1907 at the township level. The set of geographic controls adds a dummy for chernozem soil, distances to the township center, the district administrative center, and the nearest railroad, average ruggedness, and the share of forest landcover. All specifications control for the number of allotments per landed household. Standard errors, adjusted to spatial correlation within 10 km following Conley (1999), in parentheses. *p<0.1; **p<0.05; ***p<0.01

Table B5: Privatized allotments and communal institutions;
at least one privatized allotment

	Dependent variable:				
	Privatized allotments, dummy				
	(1)	(2)	(3)	(4)	(5)
Male repartition rule	0.025	−0.0005	−0.016	−0.046	−0.027
	(0.031)	(0.032)	(0.031)	(0.032)	(0.034)
No repartitions	−0.073**	−0.064*	−0.078**	−0.101***	−0.105***
	(0.035)	(0.033)	(0.032)	(0.032)	(0.034)
Sample	Full	Full	Full	Full	< 1907
Commune controls		✓	✓	✓	✓
Geographic controls			✓	✓	✓
District fixed effects				✓	✓
Mean of dependent variable	0.72	0.72	0.72	0.72	0.72
SD of dependent variable	0.45	0.45	0.45	0.45	0.45
Observations	2,411	2,411	2,411	2,411	2,025
Adjusted R^2	0.006	0.054	0.070	0.092	0.098

Notes: The unit of analysis is a commune of Simbirsk province. The dependent variable indicates if at least one member of the commune acquired a land title by 1911. The set of commune controls includes average allotment size, average family size, the share of households with no working male members, the number of households in a commune, the share of migrants, literacy rates, dummies for former serfs and predominantly Russian population, and a dummy for peasant unrest in 1905–1907 at the township level. The set of geographic controls adds a dummy for chernozem soil, distances to the township center, the district administrative center, and the nearest railroad, average ruggedness, and the share of forest landcover. All specifications control for the number of allotments per landed household. Standard errors, adjusted to spatial correlation within 10 km following Conley (1999), in parentheses.
*p<0.1; **p<0.05; ***p<0.01

C Figures

Figure C1: Simbirsk province within the Russian Empire

Notes: Map shows the boundaries of 50 provinces in the European part of the Russian Empire. Black triangles denote St. Petersburg, the capital of the Russian Empire, Moscow, the second biggest city, and Simibrsk, the provincial center of Simbirsk province. Simbirsk province colored with yellow.

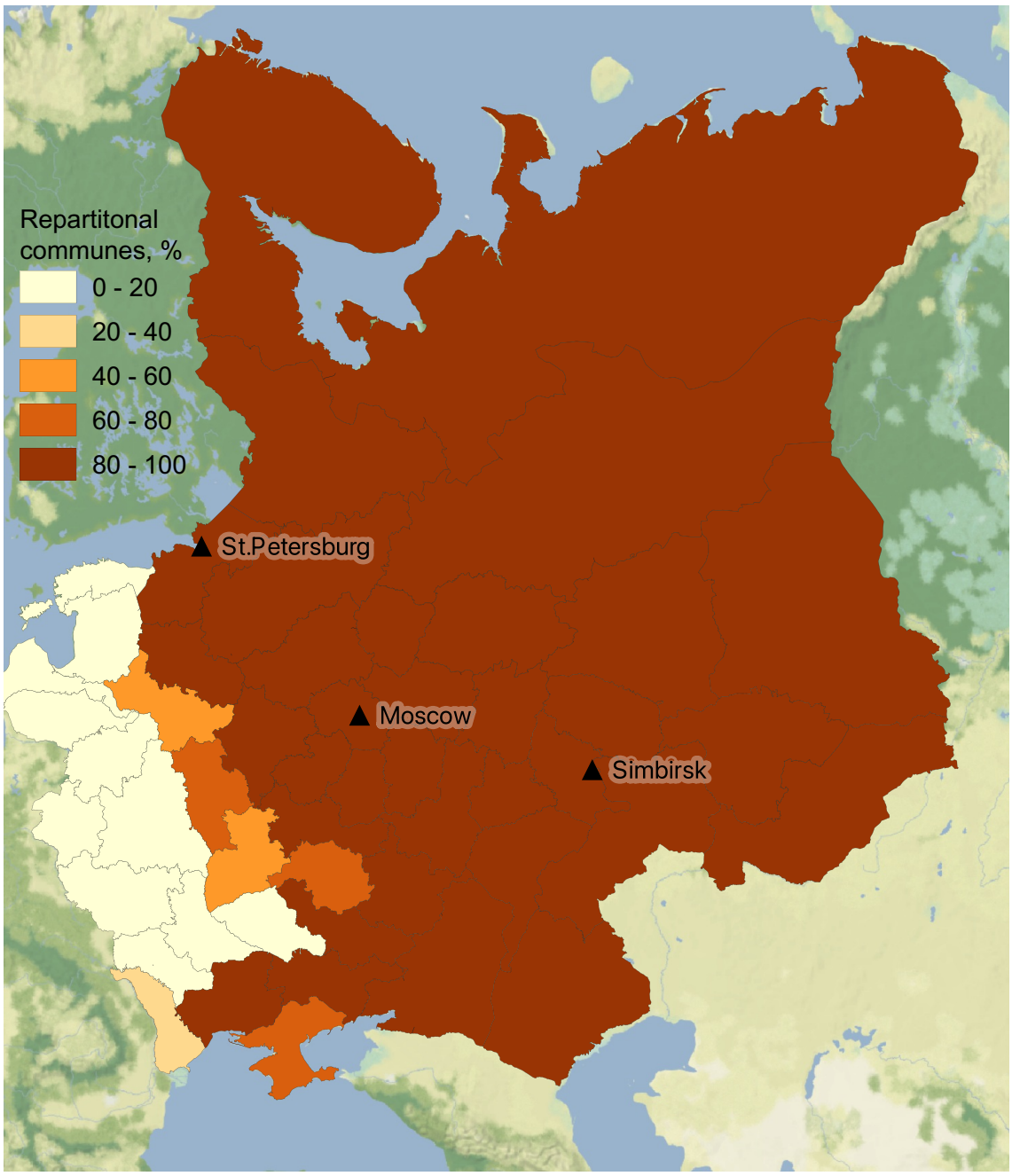
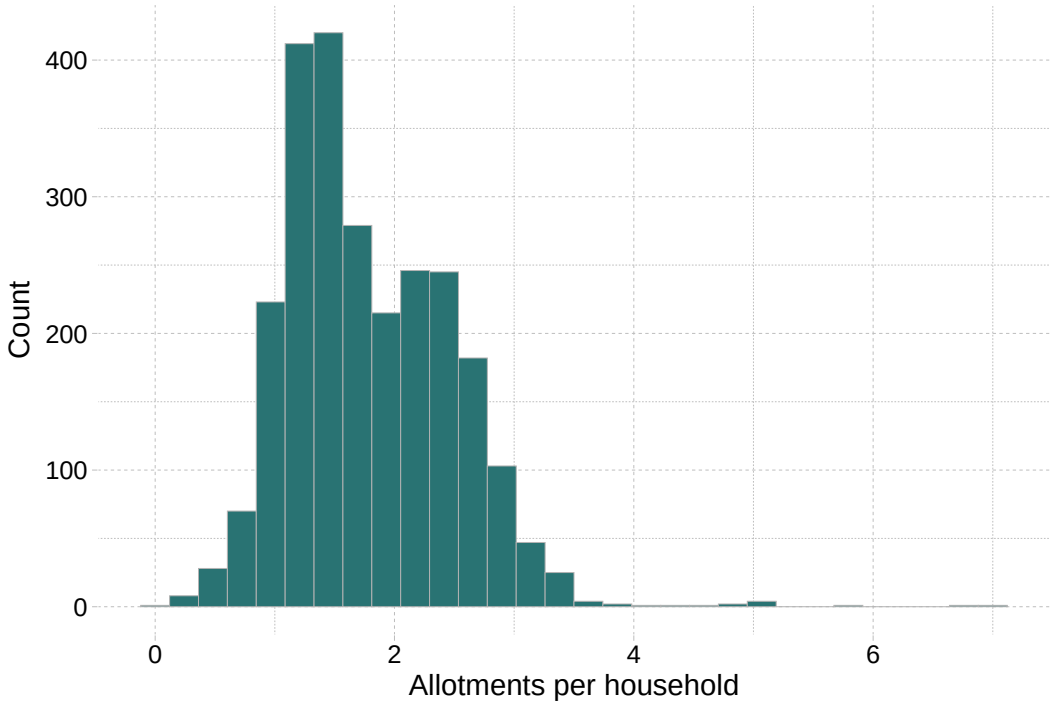
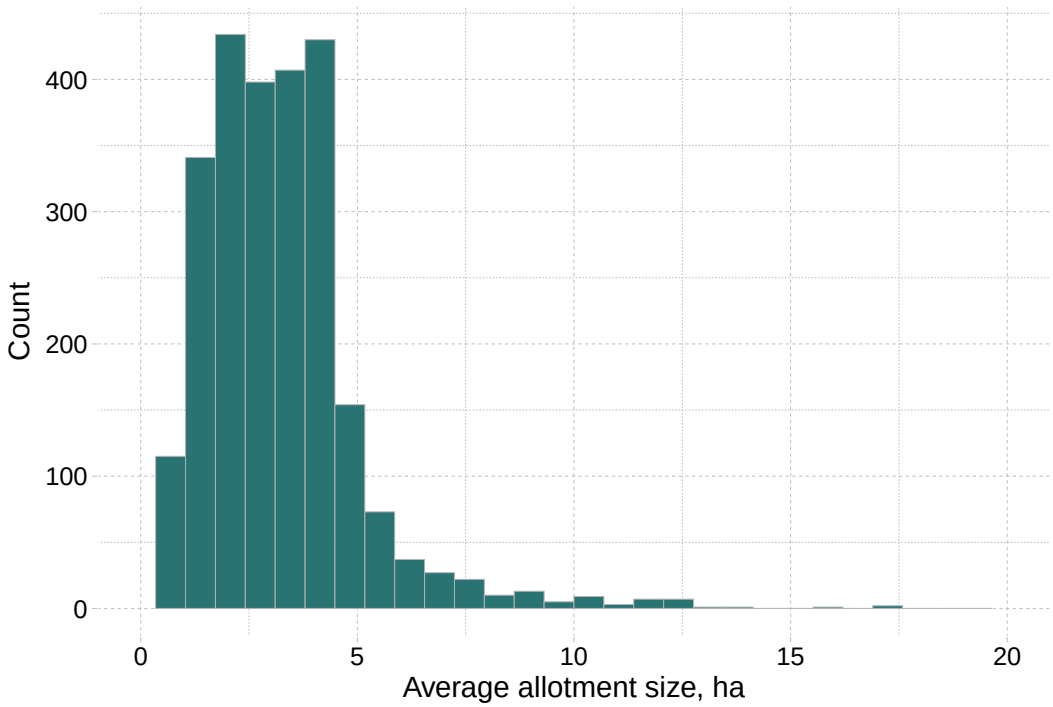


Figure C2: Percentage of communes with repartitional land tenure in 1905 across provinces of the Russian Empire

Notes: Data on the percentage of repartitional communes among all communes across provinces of the Russian Empire come from Central Statistical Committee (1907). Black triangles show St. Petersburg, the capital of the Russian Empire, Moscow, the second biggest city, and Simibrsk, the administrative center of Simbirsk province.



(a) Number of allotments per household



(b) Average allotment size, ha

Figure C3: Distributions of the number of allotments per household and average allotment size

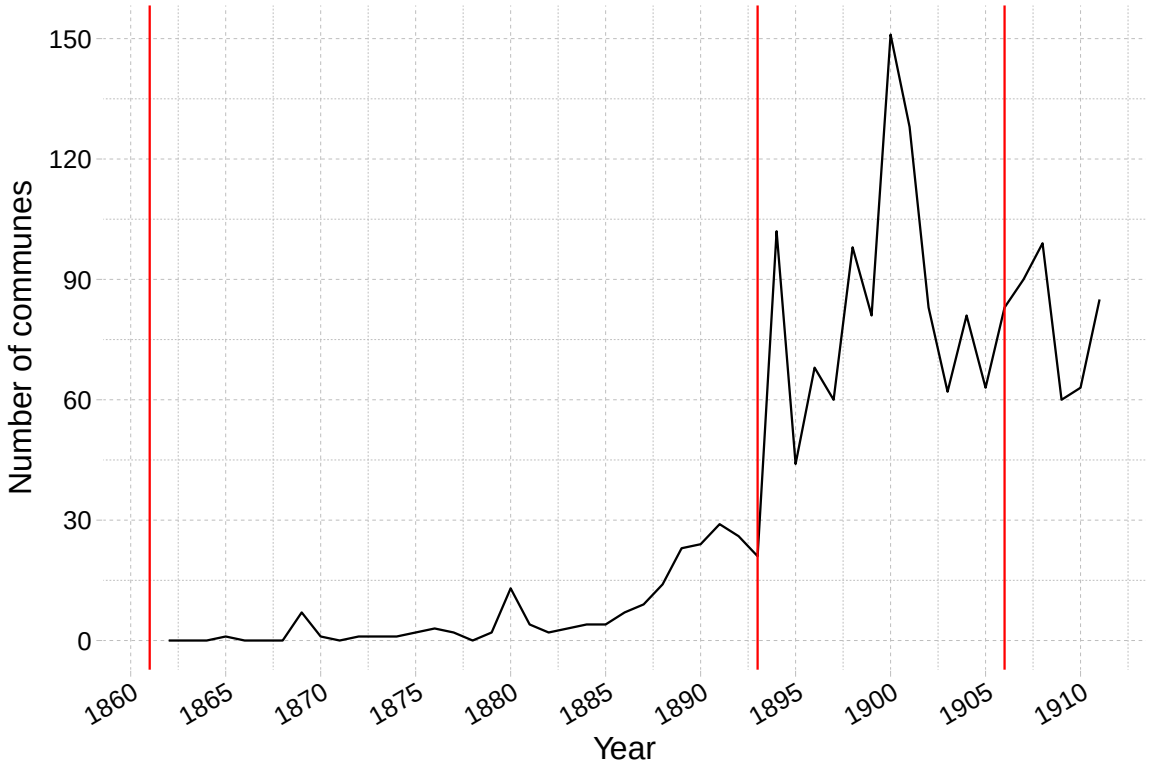
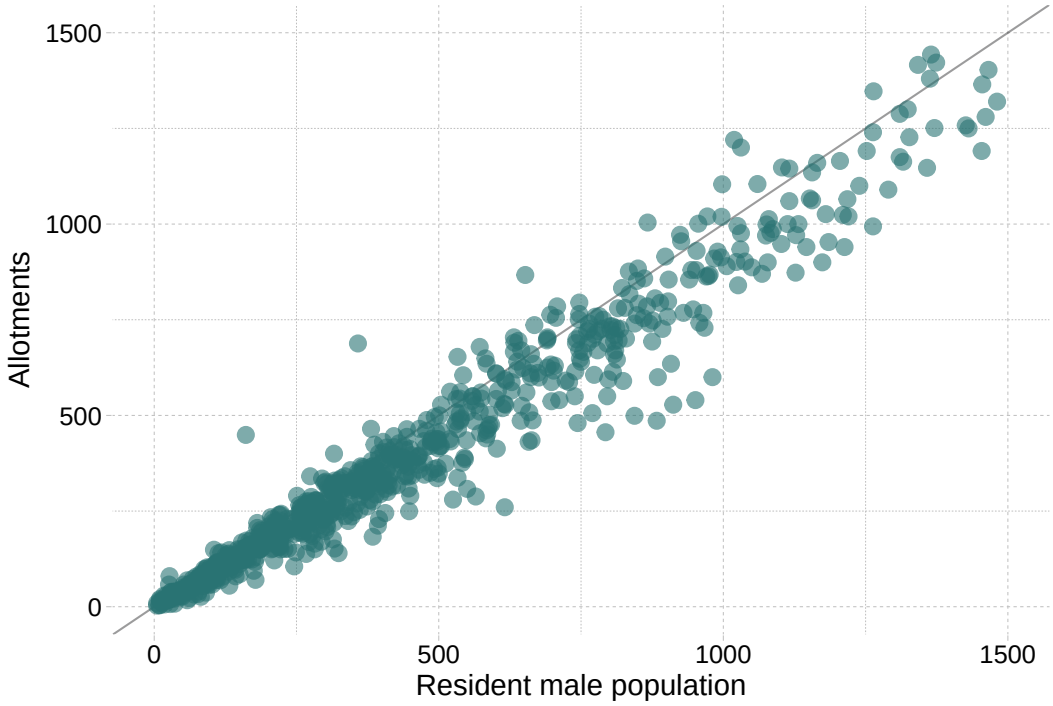
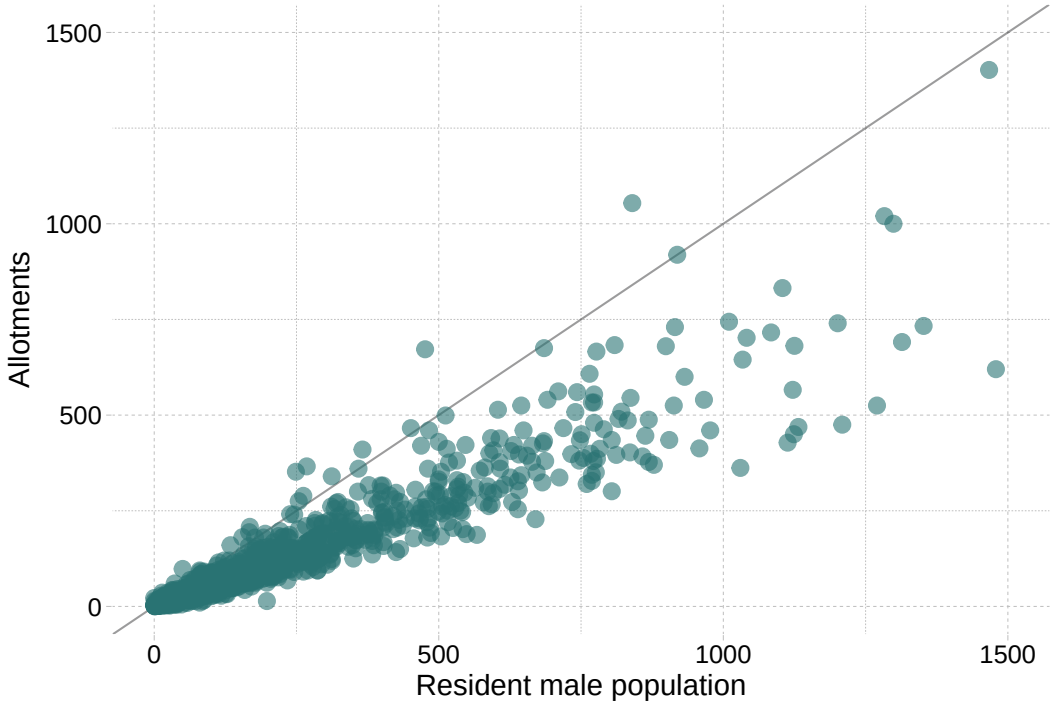


Figure C4: Communes by the year of last repartition

Notes: Figure demonstrates the number of communes that had their most recent repartition in a given year. Red vertical lines denote the abolition of serfdom in 1861, the peasant law of 1893, and the Stolypin reform of 1906. Note that the plot does not represent the dynamics of repartitioning; data come from a cross-section of communes collected in 1910–11.



(a) Male family members



(b) Revision souls

Figure C5: Resident male population in 1910 and the number of allotments by repartition rule

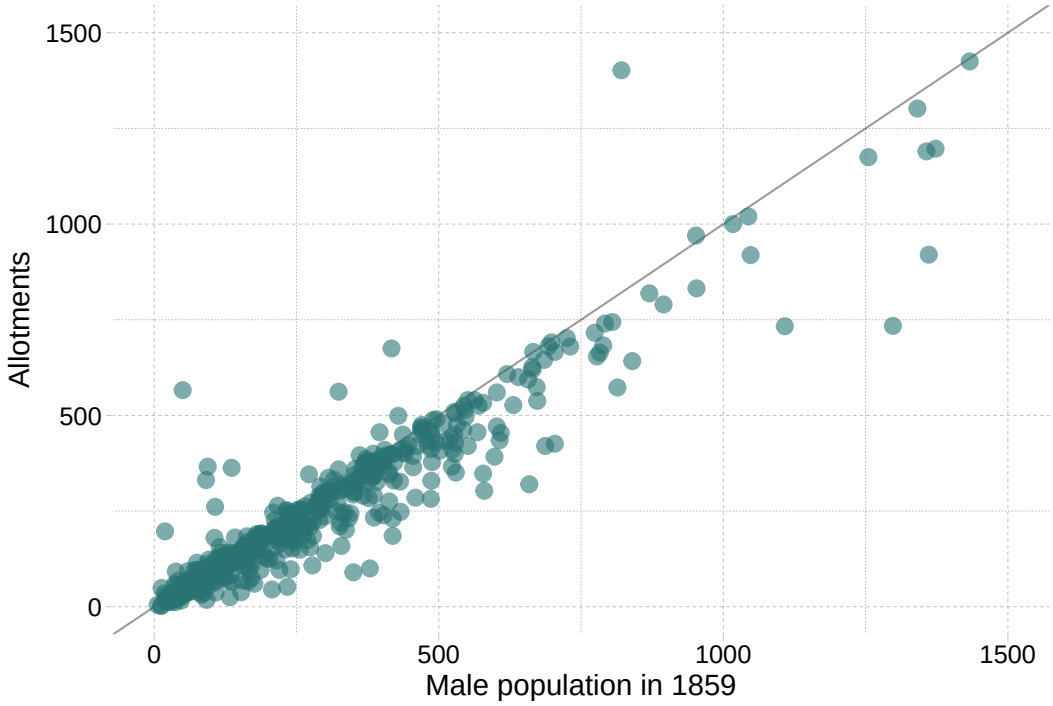


Figure C6: Male population in 1859 and the number of allotments in 1911

Notes: Data from 1911 aggregated to the level of villages. The sample includes villages where all communes employed a revision repartition rule.

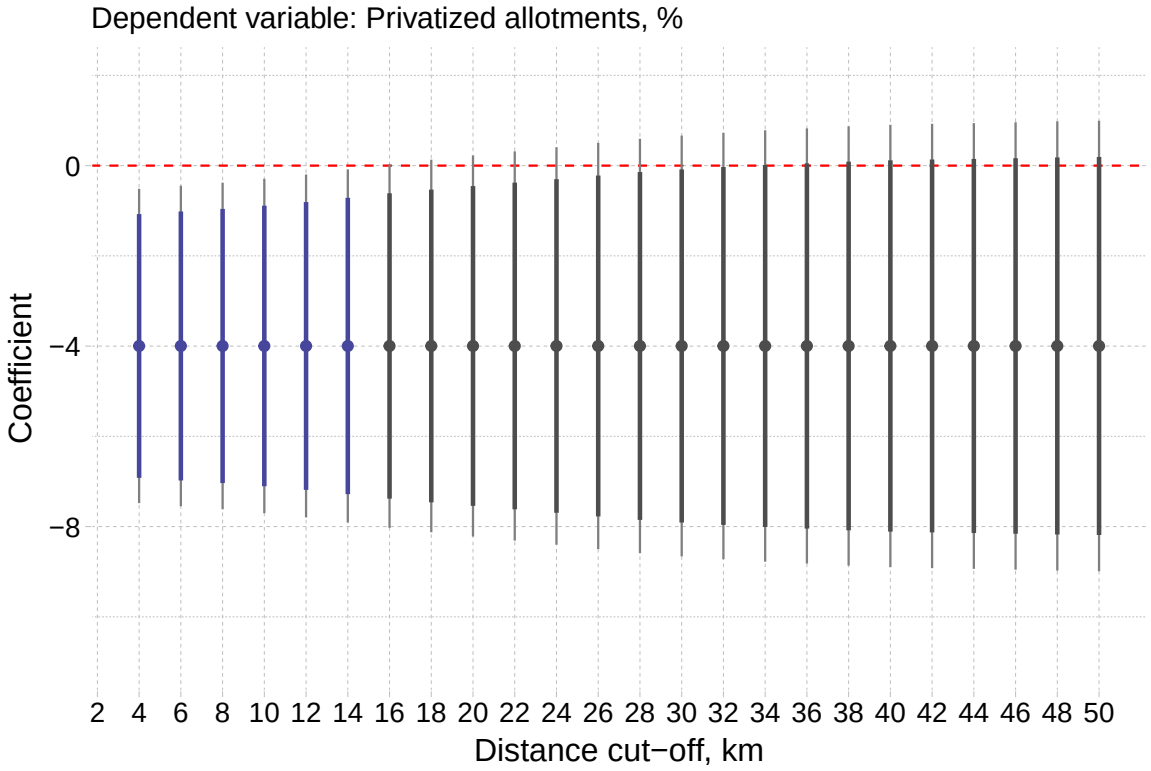


Figure C7: Coefficient on no repartitions and spatial bandwidth

Notes: Coefficient from Equation 1 with 95% and 90% confidence intervals (thin and thick lines respectively). Standard errors adjusted for spatial autocorrelation following Conley (1999). Distance cut-offs used for spatial clustering on the x-axis. Estimates insignificant at the 95% level in gray.