Historical family structure as a predictor of liberal voting: Evidence from a century of Russian history

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ABSTRACT

Family structure is considered a particularly important predictor of social and political development; historical differences in family size and other family characteristics cast a long shadow over societal development. This paper explores the effect of differences in historical family size on political behavior based on within-country variations in this characteristic in Russia. Unlike most papers on historical legacies, we trace the effect of family size over a century of Russian history with a focus on the first competitive and free elections in Russia—to the Constituent Assembly—held in 1917 and on the presidential elections in post-Soviet Russia in 1996 and 2000. Mean family size is measured based on the census data for 1897. We find a robust and significant association between smaller family size and a voting preference for parties that are economically liberal, which holds despite differences in the political, economic, and social environment between the 1910s and 1990s

1. Introduction

Political, social, and economic institutions and behavior exhibit strong persistence over time (Abad and Maurer, 2021; Cirone and Pepinsky, 2021; Nunn, 2012; Simpser et al., 2018; Voth, 2021). The vast literature on this topic documents important examples of historical persistence in a variety of cases, including the legacies of colonialism (Michalopoulos and Papaioannou, 2020), continental empires in Europe (Becker et al., 2016), communist systems (Alesina and Fuchs-Schündeln, 2007), authoritarian regimes in general (Neundorf and Pop-Eleches, 2020), government repression (Homola et al., 2020), and wars (Oto-Peralías, 2015).

The literature on historical legacies has a common feature: it assumes that, despite apparent historical discontinuity (e.g., collapse of states, regime change, or migration), social practices that emerged at a particular point of time "outlive" the environment in which they originated. However, one can rarely offer a (quantitative) study of how historical institutions and structures, which are treated as the origin of the legacy effect, affected their societies in the past. For instance, we can devise a research strategy and gather data for

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studying the effects of communist regimes' legacies on the attitudes and behavior of citizens in modern post-communist countries. However, little data is available for studying the behavior of the population in the communist regimes at their peak. For example, we can show that current citizens of formerly communist countries are characterized by strong xenophobia (Libman and Obydenkova, 2020); but we cannot be sure whether this was also the case during the communist rule, as we typically have no historical data (surveys, public opinion polls, or experimental data) with which to test this conjecture.

This creates a problem. Most studies on attitudinal legacies are based on an implicit assumption: the legacy effects emerge because, at some point in the past, the existing social structure favored a particular type of behavior, and it became imprinted onto society, such that, even after conditions changed, people continued to behave as they did in the past (on intergenerational value transmission, see Bisin and Verdier, 2001). But what if, from the very beginning, the effect of the social phenomenon that triggered a legacy was very different from what we assume today? In the example described, this would mean that the population under the communist regimes was *not* xenophobic from the start.[1] In most cases, we are confronted with multiple historical narratives, highlighting different (and partly contradictory) aspects of past institutions and societies (Lustick, 1996). Moreover, historical memories are often influenced by social discourse or political manipulation (Mylonas, 2019; Ochsner and Roesel, 2019). Thus, it is possible that in some cases the legacy research documents the effect of these "manufactured" historical memories (in which people behave in line with their *beliefs* about the past), rather than the effect of actual social structures and institutions in the past.

From this perspective, ideally, we need to study both effect of social structures on behavior and attitudes while these structures existed (which we refer as the *contemporary* effect), as well as the effect of social structures in the past on the present behavior and attitudes (the *legacy* effect; see Wittenberg, 2015).[2] In this paper, we explore a setting that enables us to perform such an analysis, by looking at one of the most basic social institutions: the organization of the family. Our attention mainly focuses an important element of family organization: the spread of nuclear vs. extended families. We look at the differences in family organization across regions in Russia in the late nineteenth to early twentieth century and test their effect on voting behavior at that moment in time (the contemporary effect).[3] Then, although by the 1990 s, after almost a century of urbanization and modernization, differences in family structure had almost disappeared, we test whether prior differences affect modern voting behavior in Russia (the legacy effect).

Based on information about the historical nucleariy of the family from the first Russian census, in 1897, we design two empirical studies. First, we examine voting for the Constituent Assembly (*Uchreditel'noe Sobranie*), a constitutional body elected in November 1917 to determine the new political organization of Russia. The assembly opened for only one day before being disbanded by the Bolsheviks. Nonetheless, the election of the assembly remained Russia's only experience with universal free elections until 1991, with the fall of the Soviet Union (Dando, 1966). Second, we look at the presidential elections in Russia in 1996 and 2000, selected because later elections were problematic, due to the consolidation of Vladimir Putin's regime, electoral fraud, and other restrictions on electoral freedom. To perform our analysis, we use highly disaggregated subregional (district) data (the Russian designation for a district was *uezd* in 1917 and *rayon* in 1996 and 2000).

We show that in 1917, small mean family size in a district (which, with some caveats discussed below, might indicate the prevalence of nuclear families) is positively correlated with voting for political groups that support liberal values (e.g., the Constitutional Democrats [*Kadet*]). And, in 1996 and 2000, areas of Russia that historically were characterized by greater family nucleariy showed stronger pro-liberal support (higher share of votes for the liberal candidate Grigoriy Yavlinskiy) and weaker support for the Communist Party of the Russian Federation, the successor to the Communist Party of the Soviet Union (CPSU). The finding is important for three reasons. First, it reveals an important (and historically robust) reason for pro-liberal political attitudes and voting. Second, as shown below, theoretical predictions of the effect of family size on political values and behavior are contradictory. Therefore, our study attempts to explain this contradiction. Third, our paper offers a study of the contemporary and legacy effects in a single setting—which, as mentioned, is an important innovation in studies on persistence.

The remaining part of the paper is organized as follows. Section 2 presents the theoretical foundation of our study. Section 3 describes the empirical case and the econometric strategy. Section 4 reports the results. Section 5 concludes.

2. Historical family structures and voting results

In research on historical legacies, the family appears to be important as both a cause of social outcomes and as a mechanism of value transmission and persistence. On the one hand, as a person's values are acquired during the formative years and at an early age (Grolnick et al., 1997; Inglehart, 2008; Min et al., 2012), the family is an essential channel of socialization during childhood. The transmission of values from older generations to younger ones occurs within the family, creating cultural continuity (on political values, see Davies, 1965; Dowse and Hughes, 1971; Jennings et al., 2009; Necker and Voskort, 2014). On the other hand, family characteristics (e.g., its organization, size, power hierarchy, and intergenerational relations) can trigger a multitude of social out-comes (Alesina and Giuliano, 2010, 2011, 2014; Alesina et al., 2015; Dilli, 2016; Dilli et al., 2013; Duranton et al., 2009; Galasso and

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[1] In this example, both assumptions are possible: the ideology of proletarian internationalism and friendship among peoples made citizens of communist countries less xenophobic, and the practice of discrimination by the regime (for which we have abundant anecdotal evidence) made them more xenophobic.

[2] Moreover, it is necessary to study the specific mechanisms that explain the persistence of legacy effects. This is also extremely difficult and is beyond the scope of this paper.

[3] Subnational data reduce the impact of unobserved heterogeneity, improving the quality of our analysis (Pepinsky, 2019).

Profeta, 2018; Huning and Wahl, 2021; Lipset and Lenz, 2000). Our paper focuses on the second aspect of the social role of the family (a predictor of social and political characteristics).

One of the basic characteristics of family structures that has historically emerged in various societies is the difference between nuclear and extended families. A nuclear family consists only of a married couple and their children whereas an extended family might include either several generations or lateral relatives. Historically, in some societies, the nuclear family has become prevalent, but in others the extended family has been the norm.[4] In our paper, we focus on the historical legacies of nuclear vs. extended families and their impact on political outcomes. We concentrate on the influence of family structure on the prevalent values that comprise economic liberalism (defined as support for a market economy, private property, and free enterprise and rejection of overall government redistribution; see Helleiner, 2003) in society.

Before we review the relevant literature, we offer several caveats. First, as mentioned in the introduction, one needs to distinguish between the effects of the historical family structure and of the contemporary family structure. In the former, the explanatory variable in the analysis is the family structure as it existed at certain moment in the past. The temporally persistent characteristic is the consequence of the family structure (e.g., values) and not family structure itself. The factors that explain the persistence of these consequences after the original cause no longer exists (e.g., family characteristics changed) could be numerous (see below). In the latter, if certain characteristics of society do not change over time, they persist because the family structure persists. If the prevalent family structure changed, so would the social outcome. Empirically, the research in other settings confirms both the persistence of family structure over time in at least some social settings (Fussell and Palloni, 2004) and changes in family structure as a consequence of general social and demographic transitions (Reher, 1998). The history of change in family structures is itself a highly contested topic (Smith, 1993).

Second, although many studies distinguish between societies with high family nuclearity and the prevalence of extended families, this is a simplification. Families have a life cycle, and thus over time the same family can be either extended or nuclear (Berkner, 1972, 1977; Goody, 1983). In many parts of the tsarist Russia, for example, families were divided after the death of the father, and each son inherited a share of the family farm. Therefore, relatively young married sons tended to live with their parents, forming extended families. After the elder family head died, his mature sons became heads of their own (at that stage nuclear) families. In the next cycle, when their children grew up, the families became extended again. Married men lived on family farm until approximately the age of forty, then they established their own nuclear families, and after they reached the age of sixty, their families usually comprised several generations (Mironov, 2016, 2018).[5] Below, we discuss the effect of this issue on our analysis.

2.1. Individualism and modernization

How does family nuclearity affect a preference for liberal values? To start with, an argument frequently made in the literature is that nuclear families promote individualistic values (including greater reliance on one's own efforts and a lower willingness to share), which, in turn, strengthen the values of economic liberalism (Gorodnichenko and Roland, 2011). Individualism within a nuclear family emerges because of two mechanisms.

The first mechanism is based on the interplay between the relative role of the family (as opposed to other channels) in providing access to resources and the type of behavior that is optimal within a family (especially an extended family) to obtain access to these resources. Max Weber (1978) highlighted that the basic rule of family life is similar to the basic postulate of communism: "Everybody contributes what he can and takes what he needs." He viewed families as small redistributive units in which people with fewer resources, for example, children, contribute less but receive as much as they need. All types of families function based on this rule, according to which more effort does not yield a larger return. This runs contrary to the individualistic ideal in which the benefits received depend on the effort expended, and people are ultimately responsible for their own success or failure. In extended families, this "unfairness" is even more salient as, according to seniority rule, older generations might obtain even more than they need whereas younger generations might contribute less than they can, compensating for their limited efforts through their loyalty to the family head.

Psychology studies find that people raised in an extended family are more likely to value "responsibility above individual achievement, conformity above self-expression, cooperation and obedience above individualism" (Rosen, 1961: 577). Larger family size is associated with more authoritarian relations within the family and parenting styles based on physical punishment, ridicule, and shouting, rather than verbal reasoning and a system of positive rewards (Elder and Bowerman, 1963). Children socialized in a nuclear family are more inclined to engage in individualistic behavior, understood as the ability to set one's own goals and to choose which social groups to join based on personal interest (Triandis et al., 1990). With respect to prerevolutionary Russia, Mironov (2018) shows that peasant families were strictly hierarchical, with the family head holding unlimited power over all family members, women expected to obey men, and younger generations expected to obey older ones. According to Mironov (2018), in extended and multiple families, the power hierarchy was even stronger given the necessity of avoiding family divisions that threatened family

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[4] Throughout the paper, we refer to the spread of nuclear (or extended) families to characterize the forms of cohabitation typical in society—when only members of a nuclear family live together or a more extended family occupies a single dwelling.

[5] This fluidity of family structure was acknowledged in the scientific and political debates in Russia in the early twentieth century: Russian economist Alexander Chayanov's famous model of the peasant economy used an autarkic family as the basic unit, acknowledging that the structure of this family (and thus its needs and the cooperation with other families) changes over time (see Tschajanow, 1923) [Tschajanow is the German transliteration of the name Chayanov].

wealth and were counter to the interests of the village authorities and the landlords. Therefore, in larger families, children were raised in an even more authoritarian atmosphere and had to obey a larger number of adults, that is, not only their parents but all their adult relatives in the family.[6]

Thus, the rules of interaction within an extended family suppress individualist values. At the same time, the crucial difference in regions dominated by extended and nuclear families is that, in extended families, most people's needs are satisfied within the family. An extended family is almost self-sufficient, with enough farm workers to ensure food security for all family members and the ability to care for children and elderly members. The prevalence of extended families slows the development of other social institutions (Greif, 2006), leading the family to become not only the primary but also the only domain of socialization. Therefore, in regions dominated by extended families, values developed in the family, including collectivism and a preference for redistribution, could become culturally dominant.

The second mechanism is more complex and assumes that the link between the spread of nuclear families and the prevalence of economically liberal values is mediating by modernization as a variable. The relationship between family nuclearity and modernization is not unambiguous (Szołtysek et al., 2011). However, many papers suggest that more widespread nuclear families could affect wealth accumulation and production patterns, which support modernization.[7] Hajnal (1965, 1982), in particular, suggested that European marriage patterns, characterized by an older age at first marriage and high celibacy rates, in combination with neolocality (people forming a separate household upon marriage) and life-cycle servants (a people who lived and worked as servants in non-kin households before they got married) led to economic growth. Delayed marriage, according to Hajnal, enabled men and women to amass savings before they formed a new family, resulting in wealth accumulation. Relying on family characteristics proposed by LePlay (1871), such as the inheritance type and family complexity, Todd (1990) showed that the nuclear family structure and impartible inheritance are associated with earlier onset and accelerated development of the Industrial Revolution and thus with economic development. Duranton et al. (2009) and Greif (2006) obtained similar results, suggesting a positive correlation between family nuclearity and wealth.[8]

If this line of reasoning holds, another way in which a nuclear family could be beneficial for economically liberal values emerges. Inglehart and Welzel (2005) emphasize that modernization entails a deep cultural change, leading to greater emancipation of an individual from the state and collective and to the spread of rationalism and individualism. Santos et al. (2017) empirically document that the modern world has become more individualistic over time. By supporting modernization, the nuclear family therefore encourages this value change and, as a result, strengthens individualism and thus economic liberalism.

2.2. Extended family and aversion to government redistribution

In the previous section, we suggest that nuclear families could strengthen liberal economic attitudes, but (hypothetically) two other mechanisms exist, which make extended families more conducive to some aspects of economic liberalism—specifically, rejection of large-scale state-led redistribution.[9]

First, extended families establish themselves as alternative centers of power, regulating the internal behavior of their members and resisting government attempts to intervene in their functioning (e.g., through redistributive programs). Todorova (1989) and Brunnbauer (2003) link the spread of extended families to a weak state, with extended families providing protection in a lawless environment. Kaser (2001) suggests that extended families were important in environments with weak alternative social regulators (e.g., the church). Under these conditions, an extended family refuses to accept government authority in areas traditionally regulated within the family structure (Boege et al., 2009), which leads to rejection of political activities based on a highly active interventionist state.

Second, nuclear families, as argued above, have limited resources and cannot implement extensive redistribution internally. A strong interventionist state could act as an alternative, protecting nuclear families from possible risks. In case extended families prevail, this interventionist state is less needed. Indeed, in countries with strong family ties, the family assumes responsibility for elder care, whereas in countries with weak family ties, this function is performed by social institutions (Reher, 1998). Additionally, long-term care insurance plays a smaller role in countries with strong family ties, as the family takes on this role (Costa-Font, 2010). Moor et al. (2013) show that in countries without an advanced welfare state, family ties are more important for the well-being of the elderly.

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[6] At the same time, other factors contributed to the depatriarchization of the family in tsarist Russia, e.g., a short life span, leading many parents to die so early that they were not present at the wedding of their younger children.

[7] In addition, the spread of the nuclear family form stimulated social trust and the formation of horizontal ties (Cole and Wolf, 1974), which are indispensable to modernization (Knack and Keefer, 1997). In a recent study, Schulz et al. (2019) show that emancipation of the nuclear family from extended kin provoked by the Catholic Church gave rise to the specific psychological characteristics of modern Western industrialized societies and populations.

[8] As noted, multiple papers come to the opposite conclusion, though, and suggest that extended families were instrumental to proto-industrialization as an important source of the labor force and facilitated survival in the harsh conditions of early industrial period. Medick (1976) draws this conclusion after observing the work of the proto-industrial artisans (he also emphasizes the role of child laborers in this context). Hareven (1975, 1982), studying American textile production in the nineteenth and early twentieth centuries, similarly concludes that extended kin and children were important in labor force acquisition during the industrial period. Other studies that argue along these lines include Anderson and Anderson (1971), Ruggles (1987), and King and Timmins (2001).

[9] At the same time, the arguments in this section do not apply to other aspects of economic liberalism, especially the preference for economic freedom.

This second argument, however, does not universally apply if one considers the role of the state over the course of history. We mention it in our paper for the sake of completeness. In the early twentieth century, government-run social welfare systems were in their infancy, and most Russians had little experience with them. Therefore, it is very unlikely that a typical voter in the Constituent Assembly election, if a member of a nuclear family, expected the government to provide social benefits in order to overcome the typical weaknesses in this family form. At the same time, for many Russians of that period, an interventionist state that encroached on what they perceived as a traditional area of the family's authority, might have been unacceptable. This could have made them more skeptical of political forces that promised large-scale reorganization of social life through government policy.

In a nutshell, we look at the tension between different sets of values associated with family nuclearity: (more or less) individualism vs. (greater or smaller) perception of the family as the key social authority.

2.3. Left-wing authoritarianism and extended family

The discussion above seems to have implications for attitudes not only toward economic liberal values but also toward authoritarian left-wing projects—particularly those based on communist ideology, which (in various ways) played an important role in Russian discourses in 1917 and in the 1990 s (on the legacies of left-wing authoritarianism in general, see Pop-Eleches and Tucker, 2020). Strictly speaking, communist ideology is not incompatible with individualism and modern values. Paretskaya (2010) suggests that, in the 1970s, the CPSU promoted individualistic values. At the same time, a corpus of literature, while treating communism as an ideology of modernism, also claims that it represented a very different type of modernity—based explicitly on the rejection of individualism (Kotkin, 1997; see also Krylova, 2014). From this perspective, a debate about communism is found in the sociological literature on multiple modernities (Arnason, 2017; David-Fox, 2006).

Todd (1985) offers an interesting argument linking family structure with the development of communist ideology. He claims that, although the absolutely nuclear family, in which children could be disinherited by their father's will, produced liberal political doctrine in England, the stem family, in which only one son could inherit, led to authoritarian, inegalitarian doctrines. For him, the main values of the French revolution—liberty and equality—were rooted in the egalitarian nuclear family that resulted from the division of family farms among all the male heirs. According to Todd, communist doctrine rests on exogamous multiple (multigenerational) families, which prevailed in Russia as well as in many other East European countries, in Eastern societies, for example, China, and in countries of Latin America, such as Cuba (which had communitarian families; see also Szołtysek and Poniat, 2018). First, multiple families imply equality, as all the male offspring inherit equal shares of land. Second, they rely on authoritarianism, given that all the family members must obey the family head. Third, exogamy triggers the creation of impersonal bureaucratic rules of cooperation among family members. By definition, in an exogamous family, spouses are strangers whose socialization in childhood was different. This situation could lead to conflicts, which are even more plausible in multiple families that consist of several marital couples under one roof. Therefore, exogamy creates a demand for extensive impersonal rules to regulate people's behavior. All three ingredients of the exogamous multiple family—equality, authoritarianism, and bureaucracy—are conducive to the establishment of communist doctrine.[10]

Communism philosophy from its very beginning assumed abolition of the family. According to Friedrich Engels (1933), the family, as a constraining institution, is needed in order to have a limited number of heirs to whom to pass down property. The abolition of property leaves less room for the bourgeois family, which could be substituted for with free love and giving women status equal to that of men. This should resonate negatively with the values prevalent in extended families.

To sum up, the anti-individualist nature of the values that develop in an extended family facilitate acceptance of communist ideology.[11] But, at the same time, the interventionist nature of communist ideology (and, to some extent, other left-wing authoritarian ideologies) encroaches on the traditional boundaries of the family and could have made this ideology particularly problematic for members of an extended family.

2.4. Hypotheses

Based on the previous discussion, we form two main hypotheses that will be tested in the subsequent analysis.[12] Essentially, our discussion so far shows that family structure (extended vs. nuclear family) contributed to more or less support of economic liberalism through a variety of mechanisms associated with the formation of different types of values. Individualism associated with nuclear families may have resonated with economically liberal ideologies (with the caveats mentioned). Hence,

Hypothesis 1. Family size is negatively associated with voting for economic liberals and positively associated with voting for left-wing authoritarian parties.

At the same time, the role of extended family as an alternative center of power, which protects its boundaries from government intervention, leads to the opposite hypothesis:

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[10] Gutmann and Voigt (2022), however, in an empirical test, provide only partial support for Todd's argument.

[11] This idea resonates with the argument made by the Russian *narodniki* (predecessors of the non-Marxist party of socialist revolutionaries), which achieved particularly strong performance in the Constituent Assembly elections. For *narodniki*, the local community of peasants (*obshchina*) was a nucleus of the future socialist order because of its distinct anti-individualist structure. Interestingly, the principles of redistribution of land in *obshchina*—based on the number of family members—favored extended families.

[12] Our analysis focuses on testing these hypotheses and not the mechanisms themselves.

Hypothesis 2. Family size is positively associated with voting for economic liberals and negatively associated with voting for left-wing authoritarian parties.

2.5. Persistence of the effects of family structure

The arguments presented above focus on the contemporary effects of family structure. As mentioned, even if the prevalent family structure changes, the effect of the historical family structure persists long afterward. Family structure affects voting by producing a certain set of values and attitudes in which certain types of behavior are perceived as legitimate and acceptable. This type of perception often survives even after the preconditions for the emergence of values disappear. The children of migrants in the second or even third generations, for example, are shown to perpetuate values that emerged in their country of origin (Alesina et al., 2013; Algan and Cahuc, 2010; Rosenthal and Feldman, 1992; Simpser, 2020). This is because parents typically believe in the superiority of the values in which they were inculcated and try to transmit these values to their children, regardless of the changing external environment (Necker and Voskort, 2014). Moreover, the legitimation of certain values, even ones that emerged because of a particular family structure, rarely explicitly refers to this family structure: people claim to adhere to these values on ethical or religious grounds (and may even fail to realize the link to the conditions that produced the values). This ethical or religious legitimacy can have a life of its own even after the prevalent type of family changes. Values can even become a core element of one's identity, and thus they persist for reasons unrelated to the original factors that led to their emergence (Greif and Tadelis, 2010). Finally, at least in Russia, the convergence of prevalent family structures across regions, if at all, most likely occurred over the most recent generations and was associated with giant changes experienced by societies primarily in the twentieth century (demographic and epidemiological transitions, rapid economic progress). The period in which the preceding family structures existed was much longer, ensuring the robustness of the values associated with them.

3. Empirical design

3.1. The Russian case

Before the 1905 revolution, although elections of representative bodies within the estate structure of the Russian empire were held (e.g., gentry assemblies, corporations of merchants of individual cities, and peasants' *obshchina* [local peasant community]), no nationwide parliamentary institutions based on free and fair elections existed.[13] The revolution led to the establishment of the state Duma as the national parliament; however, elections to the Duma were based on a class system that assigned different numbers of representatives to different social groups; the government repeatedly disbanded the Duma when it was rejected by the electoral outcomes. In February 1917, the last emperor was forced to abdicate, and the Duma formed the Provisional Government, which pledged to organize elections to the Constituent Assembly in order to determine the new political constitution of the Russian state. The Bolsheviks took over in October 1917, but elections to the Assembly still took place in November 1917. The extent of the franchise was unprecedented not only for Russia but also for most other countries at that time: all citizens over the age of 20 (including women) were allowed to vote. Despite the defunct communication networks and administrative problems caused by World War I and the revolution, elections were held and were characterized by extremely high turnout rates and competition among multiple political forces (the organization responsible for managing elections was outside the Bolsheviks' control) (Pipes, 2011; Radkey, 1989). Ultimately, the Bolsheviks failed to obtain a majority of the votes, winning only 180 of the 767 assembly seats. After meeting for only one day, the Assembly was disbanded. The Bolsheviks later seized control of Russian government, allowing no free and competitive elections in the country.

The situation started to change only after the onset of perestroika in the 1980 s. In 1989, the first competitive elections to the Congress of People's Deputies were held; in 1991, Boris Yeltsin was elected president after prevailing over five other candidates. Elections in Russia remained competitive and relatively free throughout the 1990 s, though even during this period suspicions of electoral manipulation and fraud occasionally emerged in some regions (Moser and White, 2017). In 2000, Vladimir Putin was elected president, which marked the initiation of authoritarian consolidation in Russia. As a result, beginning in the mid-2010 s, Russian elections have been systematically manipulated in terms of restricting access to opposition candidates and outright electoral fraud. The extent of fraud committed in Russian presidential and parliamentary elections has been widely investigated (Bader and van Ham, 2015; Buzin et al., 2016; Enikolopov et al., 2013; Harvey, 2016; Lankina and Skovoroda, 2017; Skovoroda and Lankina, 2017). However, we can still use the elections in the 1990 s, though not entirely free of external influences (e.g., of regional governors, who occasionally heavily affected elections in their regions), to approximate the political preferences of Russians. Given the data availability issues (at the level of aggregation needed, i.e., *rayony*), we focus on the 1996 and 2000 presidential elections.

The Constituent Assembly elections of 1917 and presidential elections of 1996 and 2000 were both characterized by the presence of strong left-wing candidates who partly embraced the authoritarian transformation of politics and society. In 1917, the majority of votes were for parties that were part of the group of Socialist Revolutionaries (commonly known under their Russian acronym *Eser*) or Social Democrats (including Bolsheviks). Although these parties had substantial differences in ideology, they all advocated various forms of redistribution and rejected the notion of free markets and liberal democracy. The party most consistently associated with

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[13] With the exception of territories with a special governance status, such as Finland.

liberal values was the Constitutional Democrats (Russian acronym *Kadet*) (Rosenberg, 1974). The Kadet party was established in 1905 and was officially prohibited soon after the revolution (but was still able to participate in elections to the Assembly). The party's original agenda focused on developing parliamentary institutions within the framework of a constitutional monarchy; after the revolution of February 1917, it embraced republican principles. The Kadet agenda included calling for an independent judiciary, government accountability to the parliament, and freedom of speech and religion. Kadets embraced the principles of economic liberalism; their program called for the abolition of the estate structure and the protection of private property, but it also included social rights (the legalization of strikes and gradual introduction of an eight-hour workday). Essentially, the Kadet party supported the slow and evolutionary path of liberalization of the Russian state, which made it strikingly different from the left-wing parties, especially the Bolsheviks, with a much greater focus on equality and redistribution and on the revolutionary transformation of society.

In the 1990s, the political spectrum of Russian politics was highly fragmented. Our analysis focuses on two candidates who fit our hypotheses relatively well: Grigoriy Yavlinskiy and Gennadiy Zyuganov (other candidates are also discussed below). Yavlinskiy (the head of the Yabloko party) can be seen as the most consistent representative of the liberal political tradition in Russia at that time, in strict opposition to the parties at both the left- and right-wing extremes and to the incumbent president Boris Yeltsin (whom he accused of authoritarian tendencies and of ignoring the needs of the population during the reforms). Yavlinskiy emphasized an agenda based on market reforms and the protection of civil liberties and social rights. Yavlinskiy's electoral support, like that of the Kadets, came from the well-educated, clustered in urban regions (Hale, 2004; White, 2006). Since 1993, Zyuganov has been chair of the Central Committee of the Communist Party of the Russian Federation (CPRF). The CPRF is firmly on the left in Russian politics, demonstrating its links to the CPSU[14]; its ideology, while though eclectic to some extent, emphasizes the issues of equality and redistribution and is skeptical of free markets, glorifying the Soviet past (Hashim, 1999). In the 1990 s, the CPRF was among the strongest political forces in Russia, as Zyuganov presented a real challenge to Yeltsin during the presidential elections of 1996. Yavlinskiy and Zyuganov both ran for president in 1996 and 2000 without substantial changes in their political platforms.

Thus the goal of our study is to link the traditional family characteristics found in individual regions of Russia to the voting patterns in 1917 and 1996/2000. H1 suggests that small families historically are positively associated with voting for the Kadets and Yavlinskiy, respectively, and negatively associated with voting for Zyuganov in the latter elections.[15] Conversely, H2 suggests that territories with large families historically are negatively associated with voting for Zyuganov and positively associated with voting for the Kadets and Yavlinskiy, respectively. In the 1917 elections, we observe the contemporary effect of the family structure, whereas, in 1996/2000, we observe the legacy effect.

As a caveat, we do not treat the conditions under which 1917 and the 1996/2000 elections were held as identical. In 1917, elections were not held in the shadow of the communist authoritarian experiment, which played an important role in the public debates in the 1990 s. Although, in both cases, Russians had very limited experience with free elections and democracy, they had less in 1917 (when many Russians voted for the first time) than in 1996. The composition of Russian society was also different. However, and this is essential for our study, the fundamental characteristic of both elections was the presence of parties and candidates, which supported or rejected massive state-sponsored redistribution and intervention in the private economy. Our goal is to understand how the legacy of nuclear families affected support for these political actors.

3.2. Mean family size

Our key explanatory variable comes from the first census taken in the Russian empire, the census of 1897, which collected detailed information on various social, economic, and cultural characteristics of the population. The detailed census, therefore, is an invaluable source for understanding the economic and social dynamics in the Russian empire during the prerevolutionary era. Census data are available at the district (*uezd*) level.[16] Clem (1986) provides a detailed overview of the census data in Russia and the Soviet Union and describes the 1897 census as a highly useful dataset for research, giving even more detailed data than subsequent Soviet censuses. At the same time, he also mentions problems with the census, in particular, incorrect reports of a person's age,[17] which is why he advises the use of age groups, rather than individual ages (a practice we follow in this paper). Schwartz (1986) also mentions that problems such as a shortage of trained census takers could have affected the quality of the data. Nonetheless, renowned intellectuals of the time (including the geographer Petr Semenov-Tyan-Shanskiy and the writers Anton Chekhov, and Leo Tolstoy) participated in conducting the census. In general, despite the caveats about the overall quality of the bureaucracy and human capital in the Russian empire of that period, without a doubt, this census is a unique source of information that has been used as the main source of data in persistence studies (Lankina, 2021; Lankina and Libman, 2021).

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[14] For example, it is a member of the SKP-KPSS (Russian acronym for Union of Communist Parties – Communist Party of the Soviet Union), a union of communist parties of the former Soviet Union that considers itself a continuation of the CPSU.

[15] We do not look at "left-wing" voting in 1917, because the elections featured numerous Socialist Revolutionary and Social Democrat groups, often competing with each other. It is therefore unclear how we could aggregate the respective vote shares.

[16] The empire consisted of a number of *gubernii* (*oblast*), which were subdivided into districts. A district typically included an urban settlement and a number of surrounding villages.

[17] This is not surprising, given the major deficits in numeracy and the traditional way of life still led by many people in the country, especially peasants. On the knowledge of one's age in Russia in the seventeenth century, see Kaiser and Engel (1993). A'Hearn et al. (2009) show that knowledge of one's age for people born in the early nineteenth century was very poor, but the situation improved for those born in 1860 s
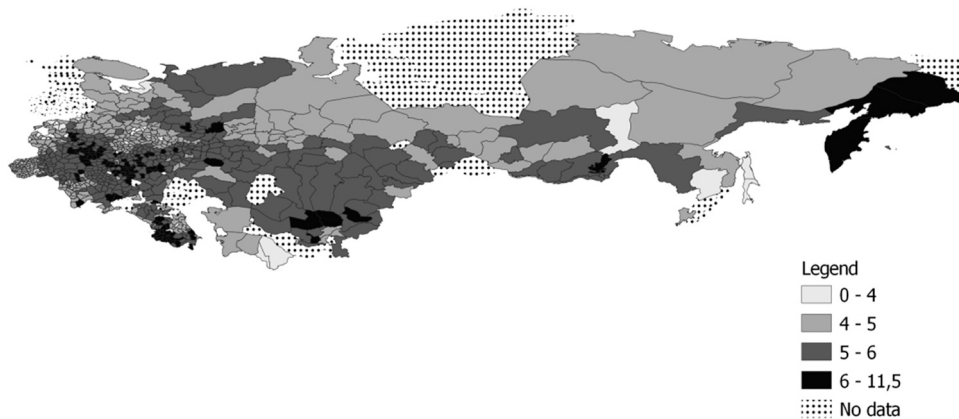
Fig. 1. Distribution of MFS across Russia 1897.

The main enumeration unit in the Russian empire was a household (*dvor*), consisting of all individuals cohabiting in a single house or (in cities) apartment (Anderson, 1986). A *dvor* includes both blood relatives and other individuals (e.g., servants, apprentices) that lived with them. Luckily for us, the census lists (for each district) information on the average number of individuals in a *dvor* and the average number of blood relatives in a *dvor*. Our analysis uses the latter, which we called the "mean family size" (MFS). MFS is thus defined (in line with the definition in the census) as the average number of blood relatives cohabiting in a single household in a district.

Fig. 1 is a map of the distribution of the historical MFS across the Russian empire. Northern and central Russia mostly had families consisting of five people or fewer. The southern part of the Russian empire, the black earth region, and the Far East (note that in the subsequent analysis, we control for dummies for groups of regions to isolate the effect of MFS from other characteristics of groups in the regions) had families of five or more members, who were likely to be extended or multiple families. In 1897 an average family consisted of 5.18 people, and in some districts, as many as 17.

Should we treat this variation as one between regions with more widespread extended and nuclear families? Czap (1983) and Hoch (1986) argue that extended families were dominant throughout the Russian empire but base their conclusions about the data on two villages located in the black earth region. Todd (1990) similarly treats all of Russia as a country with predominantly extended families, but his data was widely criticized by historians, anthropologists, and sociologists alike for his far-reaching generalizations and claims (Rijpma and Carmichael, 2016).[18] Mironov's (2018) analysis of family structure in the Russian empire is more nuanced. Although he generally agrees that extended and multiple families were predominant, he shows that heterogeneity was still widespread among Russian regions. Mironov (2018) notes an especially large variation between agricultural and industrial regions at the end of the nineteenth century. Dennison (2003) also raises evidence that family structure in the Russian empire was far from uniform. She ascribes differences in family structure to the different rules imposed by landlords. From this perspective, we expect that some variation in terms of family nuclearity existed in tsarist Russia, and we leverage this variation in our investigation.

As mentioned earlier, using the MFS as a proxy for family nuclearity could be problematic for several reasons. The first is the fluid nature of the family, which could change from nuclear to extended over the course of its life cycle. We acknowledge that this complexity is a limitation of our analysis but also suggest a way of dealing with at least some of the biases it could produce. Given the logic of evolution in a family, the family size and nuclearity in a region are likely to be endogenous to the mean age of men—determining the frequency of particular types of families in a region. We deal with this problem by controlling for the share of men age 40–59 in our analysis (it is a possible proxy for the share of nuclear families at a particular stage of evolution in family development, in line with the logic presented above), and demonstrate that this control does not affect our results (Appendix Table E3).

Another problem is that larger MFS is not necessarily indicative of more widespread cohabitation of close relatives (i.e., what we would define as extended family); it can be driven by higher fertility, leading to a larger number of children in a family (see discussion in Burch, 1967; Burch and Gendell, 1970; King and Preston, 1990; Laslett, 1972). Ideally, we need information on the individual family members and their status (spouses, children, blood relatives, etc.). This information was collected when the census took place, however, for almost all regions of Russia, it was lost during the turbulent twentieth century. Still, we conduct a number of tentative tests, which suggest that the MFS is at least a good proxy for the proliferation of extended families (see Appendix C). Appendix D discusses the application of a different explanatory variable (marital unit per household, or MUH) in our analysis—we look at the possible advantages and the disadvantages of this proxy and, nevertheless, show that applying this indicator leads to the same conclusions as the use of MFS. In Appendix Table E7, we report regressions that control for the share of women in the district of marital age (20–30 years) who never married and also confirm our results. Appendix G looks at an alternative proxy for the spread of individualism derived from family statistics (number of household divisions).

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[18] His data are less reliable, especially for regions outside Western Europe; Todd was criticized for lumping much of Africa together into one classification system.

Even with these additional tests, we acknowledge that the literature to which we refer in constructing our theoretical argument in many cases uses more sophisticated and nuanced proxies for family nuclearity and, in general, a more nuanced approach to family characteristics than we do. For example, Alesina and Giuliano (2014) demonstrate that strong family ties are associated with lower demand for government labor market regulations (because people are more accustomed to solving all problems within the family). This argument supports our H2; however, they extract information on the strength of family ties from the World Values Survey, which pose questions that explicitly interrogate individual attitudes toward the family. Strong family ties with the associated consequences (e.g., "amoral familism"; see Banfield, 1967) could also hypothetically exist in a society with predominantly nuclear families. Yet Alesina and Giuliano (2014) argue for a strong correlation between the survey items measuring family ties and the dominance of extended families. Unfortunately, hardly any other proxies for family characteristics than the one we use are available for the period of our study (late nineteenth to early twentieth century) with sufficient spatial disaggregation; in fact, the analysis in this paper is innovative compared to the absolute of prior studies by focusing on districts (rather than *gubernii* [regions]).[19]

3.3. Construction of the dataset

Our analysis proceeds as follows. For the 1917 elections, we match individual electoral districts to *uezdy* in the empire. We use Protasov's (2014) data to calculate the share of votes received by the Kadet party in an electoral district and regress it on the MFS and some control variables below. Our data cover all regions of the Russian empire where elections took place and for which their outcomes are available (i.e., not only the territories of modern Russia but also those of other modern post-Soviet states).[20] However, we omit individual electoral districts in Central Asia because of their striking cultural dissimilarity with the rest of the empire and numerous lacunae in election data. The European portion of the empire, parts of Siberia, the Baltic provinces, and the Caucasus, where elections were held, comprised 470 *uezdy*.

Performing our analysis on the 1996 and 2000 elections is substantially more difficult because the territorial boundaries of the Russian regions had changed considerably since the census of 1897. In the 1990 s, Russia consisted of 89 regions (republic, *krai, oblast,* etc.) subdivided into a number of *rayony*. Fundamentally, analogues can still be found between the old and new territorial units: *gubernii* correspond to regions, and *uezdy* correspond to *rayony*. However, Russia has over 2000 *rayony*. To match the territories of historical and modern territorial units, we use the dataset generated by Andrei Medvedev (Institute of Geography of the Russian Academy of Sciences) generously provided to us to perform our analysis. This approach is implemented as follows: a map of the Russian empire was divided into a grid of squares of 5 × 5 km in size. Each square was attributed to a particular *uezd*. Then, a map of the modern Russian Federation was superimposed onto it. Thus, for each modern *rayon,* we could see how many squares of the grid were in a particular historical *uezdy*. We then calculated the historical MFS in a *rayon* as the weighted average of the historical MFS of the *uezd* that the territory of the *rayon* (partially) covers, weighted by the share of grid squares of the *rayon* in the historical *uezd*.[21] Then, we estimated a regression of voting outcomes in 1996/2000 on the MFS of 1897.

More specifically, we use two approaches. First, we regress voting outcomes in 1996 and 2000 on the historical MFS using two separate regressions (one for each election). Second, we pool data for both elections and estimate regressions including time-fixed effects (dummy for 2000 elections).[22] The advantage of using the pooled data is that they have higher degrees of freedom; yet, at the same time, voting behavior in 1996 and 2000 could be characterized by time-specific features, which are better captured if we estimate the regressions separately. The analysis of 1996 and 2000 covers only the territory of the current Russian Federation—that is, it does not include territories that were in the empire but are now in other post-Soviet states. We omit the territory of the present-day Kaliningrad Oblast and the Tyva Republic, because they were not part of the Russian empire before the revolution, and no information can be extracted from the tsarist census on their historical family structure.[23]

3.4. Control variables

In the regressions for 1917, we control for a number of additional confounders (given the data availability for this period).

- First, Russian regions differed considerably in terms of economic well-being and development level, and it is possible that these differences were reflected in voting patterns and MFS.[24] Income data at the *uezd* level are not available; therefore, we extract the

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[19] A handful of recent studies on historical legacies look at *uezd*-level data, e.g., Buggle and Nafziger (2021), Lankina (2021), and Lankina and Libman (2021). Almost all studies use *gubernia*-level data.

[20] By the end of 1917, the Provisional Government had already proclaimed a republic, but established no name for the new state; we refer to the Russian empire for convenience. In some regions (particularly Poland, which was under German control, Finland, which had declared independence, and most of Central Asia), elections were not held.

[21] Thus, if a hypothetical *rayon* consisted of seven 5 × 5 km squares, of which 3 were in *uezd* A and 4 in *uezd* B in the past, the historical MFS for this rayon was calculated as 3/7 x MFS in *uezd* A + 4/7 x MFS in *uezd* B.

[22] Note that *rayon* fixed-effect models cannot be used because historical MFS does not change for the same *rayon* in 1996 and 2000.

[23] In Kaliningrad, whose population was replaced almost 100% after World War II, any information on historical family structure would be useless.

[24] Economic development often triggers a decline in family size because of lower fertility and greater autonomy among women (Lesthaeghe, 2010); at the same time, it can also strengthen liberal voting.

wealth of the *uezd* through a principal component analysis of two variables: the share of the urban population and the share employed in the industrial sector, which both serve as indicators of modernization and accelerated development in the 1890 s. Thus this variable also captures the extent to which urbanization prevailed in certain districts in the late nineteenth century. We acknowledge that this variable is merely a proxy, rather than a direct indicator of wealth.

- Second, we control for the share of agricultural employment in the *uezd*, which could be associated with voting for the Eser parties (representing the interests of the peasants) and, at the same time, be linked to a larger MFS (reflecting the needs of agricultural production at the technological level that prevailed in Russia during that period).[25]

- Third, we control for the number of children age 0–4 years per woman age 15–44. We already mentioned that fertility rates can affect the MFS (and make it more difficult to infer the nuclearity of the family from the MFS proxy). Fertility also affects political attitudes (Fieder and Huber, 2018). By introducing this control, we differentiate between regions in which families have a different size not because of different birth rates but because of different social norms, in which multiple generations cohabitate in a single family or leave it at a certain period of their lives.

- Finally, we include dummies for major geographic areas of the empire: Siberia, the Volga, northwestern regions, and the Caucasus, with central Russia serving as the default group. These dummies should capture the heterogeneity of culture and environmental conditions, influencing both voting preferences and MFS.

In addition to these main variables, we also estimate several specifications with further controls as robustness checks.[26].

- First, we control for the share of the main non-Orthodox religious groups (Old Believers, Muslims, Jews, members of the Armenian Apostolic Church, Catholics, and Protestants) as reported by the 1897 census. In prerevolutionary Russia, religion is a better marker of differences in identity than ethnicity (given that, in many parts of the empire, nation-building was at an early stage). Religious identity can affect both MFS and political attitudes.

- Second, we control for three geographic characteristics: elevation above sea level and dummies for *uezdy* located less than 50 kilometers from the nearest large river and from the coastal line. These dummies serve as a proxy for the historical attractiveness of a location for commerce and industry, which could have affected the formation of population norms and values. They also capture access to international trade and the extent of contacts with foreigners, influencing the development of social norms.

For modern Russia, we estimate several regressions with various control variables:

- First, our baseline regression contains the same variables as the baseline historical regression, with only one exception: we replace the dummies for macroregions in the Russian empire with dummies for federal districts in modern Russia to capture the spatial heterogeneity in modern Russian politics and society more precisely.[27] We also add a dummy for all districts located in the so-called ethnic republics and to other ethnic regions of Russia.[28] These regions are characterized by electoral behavior that differs significantly from that of the rest of Russia (White, 2015; White and Saikkonen, 2017) and is likely to differ from the rest of Russia in terms of the transmission of historical legacies due to cultural specificity.[29]

- Second, we estimate a specification that also includes the historical geographic and religious characteristics of the territories mentioned above.

- Third, in a further specification, we add the prevalent modern family characteristics within the districts to the set of controls, extracted from the Database of Indicators for Municipal Units (2010, 2012), from the Russian official statistics (Rosstat)): the average number of family members and the average number of children per woman. These control variables allow us to isolate the causal path in which the historical family structure affects modern political outcomes: is the effect driven by the persistence of the family structure or can it be observed, ceteris paribus, in modern family structure, that is, it occurs as a result of norm and value persistence as described above.

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[25] Certainly, if the share of agricultural employment in the regions declines, the share of industrial employment typically increases, so that two variables in our regressions can be collinear (although the fact that we use the principal component analysis of two variables to construct our wealth proxy prevents perfect collinearity). In Appendix E we replicate our regressions controlling for only one of these variables; the results remain unchanged (see Appendix Table E8).

[26] The results are reported in the Appendix Tables E4, E5, and E6.

[27] Federal districts are large groups of regions established by Putin in 2000. They should be distinguished from districts (*rayony*), which are subdivisions of regions and the main unit of our analysis.

[28] Russian federalism includes both the ethnic regions (republics, autonomous *okrug* and *oblast*), where a specific ethnic group (*titul'naya natsional'nost'*) enjoys special rights and privileges and non-ethnic regions (*oblast, kray*, federal city). Ethnic regions typically have a large share of non–ethnic Russian population, whereas in the non-ethnic regions, Russians are the predominant ethnic group.

[29] We also use two robustness checks, in which, instead of the dummy for all ethnic regions, we apply: (a) a dummy for all districts in the ethnic republics of the Northern Caucasus and of some republics in Southern Siberia (which Zubarevich [2013], in her influential analysis of Russian political and social geography, treats as strikingly different from the rest of the country; we include Adygeia, Kabardino-Balkaria, Karachaevo-Cherkessia, Northern Ossetia, Ingushetia, Chechnya, Dagestan, and the Altai Republic; as mentioned, Tyva is not included in our sample); and (b) a set of dummies for each of the ethnic regions in Russia.
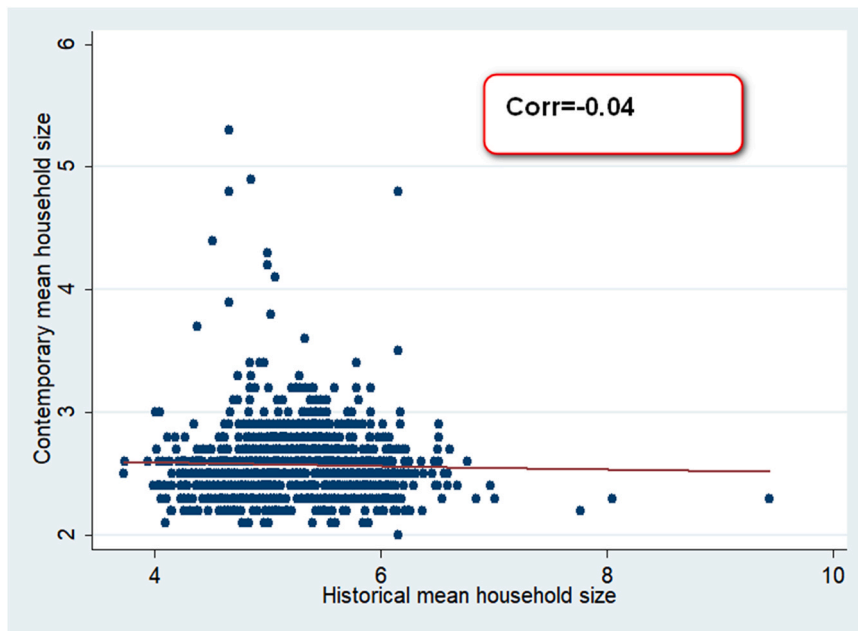
Fig. 2. Correlation between the historical and contemporary MFS.

Fig. 2 plots the correlation between the historical and modern family size in Russian districts: it shows that the MFS is smaller in modern Russia than in the tsarist era (as expected, given the urbanization and modernization over the past century) and is not very correlated with the historical MFS (correlation coefficient of -0.04). This is not surprising. Over the course of the twentieth century, the family structure (in particular, the spread of nuclear and extended families) in Russia changed significantly. First, Russian society became more urban: the share of city dwellers increased from 15% in 1897 to 73% in 2001. Urbanization fosters the spread of nuclear families (Kaldate, 1962). The construction style of housing pursued by the Russian government since the Nikita Khrushchev era in the 1950 s explicitly followed the ideal of a nuclear family: in cities, few apartments or individual houses were constructed that were appropriate for residence by extended families. Second, the social and child-care infrastructure in the communist era, while imperfect, also supported family nuclearity (people did not have to rely on support from their family members due to the availability of governmental support). Third, in general the communist regime was hostile to local characteristics and social practices, because of its goal of uniformity in social behavior throughout the Soviet Union. Empirical research confirms the shift from extended to nuclear families in Russia over the course of the twentieth century (Afontsev et al., 2008), although despite persistence in some aspects of extended families (e.g., support to parents from their own parents by providing child care). Essentially, it means that over the past century, the regional variation of MFS in Russia (with some exceptions) converged with the transition to omnipresent family nuclearity. This makes it possible to test the effect of the extended family structure in the past even after it became nearly irrelevant in most regions in Russia.

We also use a further specification, which includes additional modern control variables. We interpret this specification cautiously, because many modern variables (e.g., economic development or education levels in the district) could be mediators between historical variables and modern outcomes. For example, the economic development of a *rayon* is most likely influenced by historical economic development and perhaps by historical family structures; thus, by adding this variable to the set of covariates, we might overcontrol for bias (Lenz and Sahn, 2021; Morgan and Winship, 2015). If the modern variables are not driven by history, they are unlikely to constitute omitted confounders (the temporal ordering of the variables suggests that modern variables do not influence the historical variables), and therefore controlling for them is not necessary. Still, in a robustness check, we use data assembled by Lankina and Libman (2021) and control for several modern *rayon*-level characteristics: the urban share of the total population in the district (urbanization levels), the number of doctors per capita (quality of health care), the education level (the share of the population with a university degree), retail trade turnover, housing construction per capita, and income per capita (three proxies of well-being).[30] Although we present the baseline regression results, the specifications using additional controls are available from the authors upon request: they confirm our main findings.

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[30] Other variables at the *rayon* level are not available due to the low quality of Russian statistics.

Table 1
The effect of family structure on the share of votes for the Kadet party (%) in the 1917 elections.

	OLS
MFS (1897 census)	-0.905 * **
	(0.338)
Children age 0–4 per woman age 15–44 (1897 census)	-19.302 * **
	(6.152)
Proxy for wealth (1897 census)	-0.634
	(0.453)
Share of agricultural employment (1897 census)	-11.667 * **
	(3.031)
Region dummies (central region as reference group)	
Volga	0.602
	(0.637)
Siberia	-0.870
	(0.907)
Northwest	-2.925 * **
	(0.370)
Baltic	-6.055 * **
	(0.552)
Caucasus	-1.202 *
	-0.694
Constraint	30.703 * **
	(4.763)
Number of observations	422
R-squared	0.46

Note: * ** $p < 0.01$, * * $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses. OLS = ordinary least squares.

Finally, throughout our analysis, we perform two further robustness checks. First, we use an alternative method of regionalization in Russia—instead of looking at large macroregions, as typically used to provide a complex characterization of certain territories, we use dummies for different types of landscapes, as identified by Moon (2013). We digitized the maps by Moon (2013) and matched them to our dataset. The types of landscapes may be particularly important for the type of agriculture performed and thus for the family structure of Russian prerevolutionary peasants (the majority of the population at that time). For the same reasons, we also use data from Galor and Özak (2016), which is a more advanced version of Ramankutty's Land Suitability for Agriculture Index with more fine-grained resolution. Again, we match the information on the agricultural suitability of certain kinds of terrain in Russia to our dataset. The results do not change after these controls are added (see Appendix Tables E1 and E2).

Second, we address the contemporary criticisms of the legacy studies by Kelly (2020), according to which many papers on persistence overlook the spatial dependence of the residuals. As a result, the papers mistakenly report a deep historical correlation, which in reality reflects only spatial patterns in the data. We address this problem in Appendix F. MFS has strong spatial correlation, which makes our regressions of the legacy effect (elections in 1996 and 2000) questionable. However, we also replicate these regressions using spatial lag and spatial error models and confirm our findings: thus, the legacy effect we observe in our study cannot be reduced to simple persistent spatial associations.

4. Results

Table 1 reports our findings on the outcomes of historical voting for the Constituent Assembly. The results are unambiguous: MFS and the share of votes for the Kadet party have a strongly significant and negative association. This implies that smaller families went hand in hand with more liberal voting when socialist ideas were very popular in Russia. An increase in MFS of one person reduces the share of votes for the Kadet party by one percentage point (with an average share of votes for Kadet of 4.7% and a standard deviation of 3.7%). We saw this effect even after controlling for other district-level characteristics, including wealth and the share of agricultural employment. The results strongly support H1 and reject H2; in Russia, individualistic values associated with a smaller MFS seem to trump fears of government intervention in the autonomy of extended families. Fig. 3 reports the nonparametric association (local polynomial smoothing) between the size of the family and the share of votes for Kadet; the association remains robustly negative throughout the range of observed data.[31] Therefore, our findings are not merely an artifact of the linear functional form of the regressions estimated.

Table 2 looks at the voting outcomes eighty years later, in post-Soviet Russia and in the presidential elections in 1996 and 2000. As mentioned, we estimate the regressions using pooled data and for each of the elections separately. Regardless of the approach used, we find a significant and positive correlation between MFS and voting for Zyuganov and a significant and negative correlation

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[31] We excluded two districts, for which the census reports an average MFS of less than two; the omission of these districts from our regressions also has no effect on the estimation outcomes.
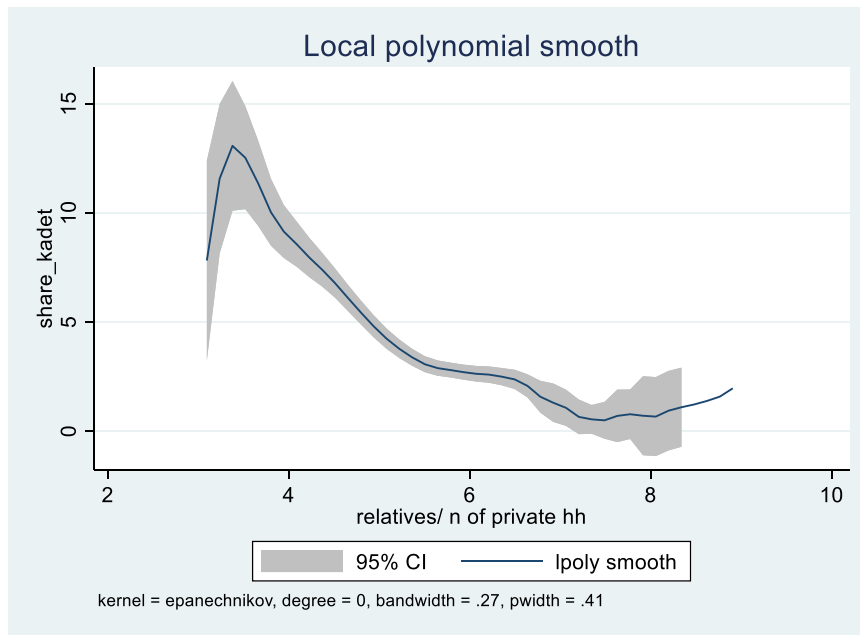
Fig. 3. Nonparametric association between the MFS and the share of votes for the Kadet party.

between MFS and voting for Yavlinskiy. An increase in MFS by one person produces an increase in votes for Zyuganov of approximately five to eleven percentage points and a decrease in votes for Yavlinskiy of one to two percentage points. This is a substantial effect: in 1996 Zyuganov received, on average, 41.3% of the votes (standard deviation 16.1%), and Yavlinskiy received 5.1% (standard deviation 2.9%). Again, the effects support H1. Fig. 4 confirms the relation that we find using nonparametric local polynomial smoothing.

The results are robust to different specifications presented in the previous section. Furthermore, modern MFS has no robust effect on modern voting patterns after historical MFS is controlled for (see Appendix E). This means that the effect we observe is one of norms and values, which emerged historically and survived throughout the past century; modern differences in family size after a century of convergence and social transformation under communist rule do not produce similar effect on political behavior.

Regressions using regional data are particularly likely to be influenced by outliers, and we deal with this problem in a robustness check. We apply three tests: (a) we estimate robust regressions (*rreg* in Stata, which is particularly robust to outliers), (b) we estimate median regressions (with bootstrapped standard errors); and (c) we exclude *uezdy* and *rayony* with particularly large and small MFS (less than three and more than seven—MFS of less than three could represent extraordinary conditions, as they appear to be highly unlikely in most societies; as a result, we omit ten *uezdy* from our analysis). For the modern elections, we exclude all districts in which Yavlinskiy received more than 10% of the votes (again, they constitute a very small share of all districts), and for historical elections we omit all districts in which the Kadet party received more than 10% of the votes (again, these are mostly outliers).

Furthermore, for the modern elections, we also estimate an additional set of regressions, in which we use the share of votes received by other major presidential candidates as dependent variables. Although the ideological positions of Yavlinskiy and Zyuganov are particularly suitable for our theoretical framework, other candidates are more difficult to analyze from this perspective: nevertheless, they could provide interesting observations. Specifically, we look at the share of votes received by Vladimir Zhirinovskiy (1996 and 2000), Vladimir Putin (2000), and Boris Yeltsin (1996). Zhirinovskiy's position on the Russian political spectrum is one of a populist-nationalist candidate with an extremely vague and unclear agenda that rejects both democratic reforms and the communist past (Yoffe, 1994). The positions of the incumbent president Yeltsin and his designated successor Putin on the liberalism–illiberalism spectrum are also difficult to analyze. Yeltsin originally rose to power as a proponent of liberal market reforms, but by mid-1996 he had more eclectic positions and supporters. Furman (2010) argues that quite a few voters supported Yeltsin simply because he was the incumbent president and thus the representative of the status quo. In the early years of his presidency, Putin enjoyed support from some pro-market liberal reformers,[32] but also engaged in some statist rhetoric about restoring rule and order, which led the voters to question his commitment to markets.

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[32] And, indeed, implemented several important reforms; see Åslund (2004).

Table 2

The effect of historical family structure on support for presidential candidates (%) in the 1996 and 2000 elections.

	Share of votes for Zyuganov OLS	Share of votes for Zyuganov OLS	Share of votes for Zyuganov OLS	Share of votes for Yavlinskiy OLS	Share of votes for Yavlinskiy OLS	Share of votes for Yavlinskiy OLS
MFS (1897 census)	10.64 * **	5.497 * **	8.056 * **	-1.173 * **	-1.077 * **	-1.122 * **
	(0.945)	(0.551)	(0.541)	(0.132)	(0.161)	(0.106)
Children age 0–4 per woman age 15–44 (1897 census)	-17.18 *	6.387	-5.445	1.855	-0.133	0.873
	(10.10)	(7.724)	(6.898)	(2.185)	(1.958)	(1.469)
Proxy for wealth (1897 census)	1.450 *	2.223 * **	1.838 * **	-0.212	0.617 * *	0.202
	(0.838)	(0.669)	(0.547)	(0.132)	(0.294)	(0.172)
Share of agricultural employment (1897 census)	27.86 * **	18.30 * **	23.13 * **	-4.397 * **	-2.529	-3.475 * **
	(5.437)	(4.321)	(3.576)	(0.952)	(1.650)	(0.997)
Dummy federal districts (central district as reference group)						
Northwest	-16.65 * **	-13.10 * **	-14.89 * **	2.698 * **	-0.169	1.267 * **
	(0.930)	(0.722)	(0.598)	(0.285)	(0.250)	(0.202)
South	2.674 * *	1.342	2.007 * *	-0.398	-1.314 * **	-0.855 * **
	(1.314)	(1.081)	(0.861)	(0.261)	(0.272)	(0.190)
North Caucasus	4.483 *	-0.502	2.080	-1.322 * **	-0.289	-0.828 * *
	(2.444)	(1.322)	(1.473)	(0.428)	(0.690)	(0.414)
Volga	1.412	-2.187 * **	-0.399	0.0751	-0.972 * **	-0.446 * **
	(0.876)	(0.719)	(0.579)	(0.184)	(0.166)	(0.126)
Urals	-10.42 * **	-3.194 * **	-6.816 * **	-0.187	0.0717	-0.0559
	(1.047)	(0.940)	(0.789)	(0.227)	(0.259)	(0.177)
Siberia	2.284 * *	0.858	1.564 * *	0.442 * *	-1.085 * **	-0.319 * *
	(0.958)	(1.020)	(0.712)	(0.219)	(0.208)	(0.153)
Far East	0.939	0.732	0.840	-0.160	-1.453 * **	-0.808 * **
	(2.315)	(1.574)	(1.393)	(0.347)	(0.388)	(0.263)
Dummy ethnic region (contemporary Russia)	-1.666 *	-6.886 * **	-4.263 * **	0.267	0.517 * **	0.388 * **
	(1.011)	(0.829)	(0.690)	(0.223)	(0.173)	(0.146)
Constant	-16.55 * *	-8.888	-7.978	12.33 * **	10.09 * **	12.54 * **
	(7.843)	(6.199)	(5.282)	(1.710)	(1.718)	(1.183)
Number of observations	1521	1519	3040	1521	1519	3040
R-squared	0.488	0.290	0.422	0.241	0.358	0.401
Period	1996	2000	Pooled 1996/2000	1996	2000	Pooled 1996/2000
Time FE			YES			YES

Note: * ** $p < 0.01$, * * $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

The results for Yeltsin, Zhirinovskiy, and Putin are reported in Appendix A. For Zhirinovskiy, we follow the approach in Table 2, and the results are not robust: we find a significant and negative correlation between the share of votes for Zhirinovskiy and the historical family size in 2000, but not in 1996 and not in panel data. We cannot use panel data for Putin and Yeltsin because they ran only once in our dataset (in 1996 and in 2000, respectively), and the correlation between the historical family size and the share of the vote is also negative. It looks as if all the prominent candidates lost votes in locations with bigger historical MFS to the communist (left-wing authoritarian) candidate.

Finally, we acknowledge that a potential problem in our analysis is omitted-variable bias: other characteristics of districts can influence both district-level MFS and voting outcomes. This problem is typical in legacy studies and, in a sense, reflects the issue associated with choosing the right moment for exploring when the legacy originated: the alleged historical legacy variables might merely mediate another deeper historical legacy (see, e.g., Huning and Wahl, 2019; Lankina et al., 2016; Pop-Eleches, 2015). In Appendix B, we attempt to provide at least a partial solution to this problem by using instrumental variables (IVs).[33] Our IV approach is based on using the exposure to famine in 1891–1892 as a possible exogenous shock that influenced the historical family structure. The results of the IV estimations confirm our findings; however, this section should be analyzed with caution, acknowledging that our choice of instruments is imperfect (particularly in terms of exclusion restrictions). We still believe, however, that even correlational evidence related to our research topic is important, given the potential salience of family as a social institution and its impact on pro-liberal voting.

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[33] For other applications used in the context of historical legacy research, see Wimmer (2016).
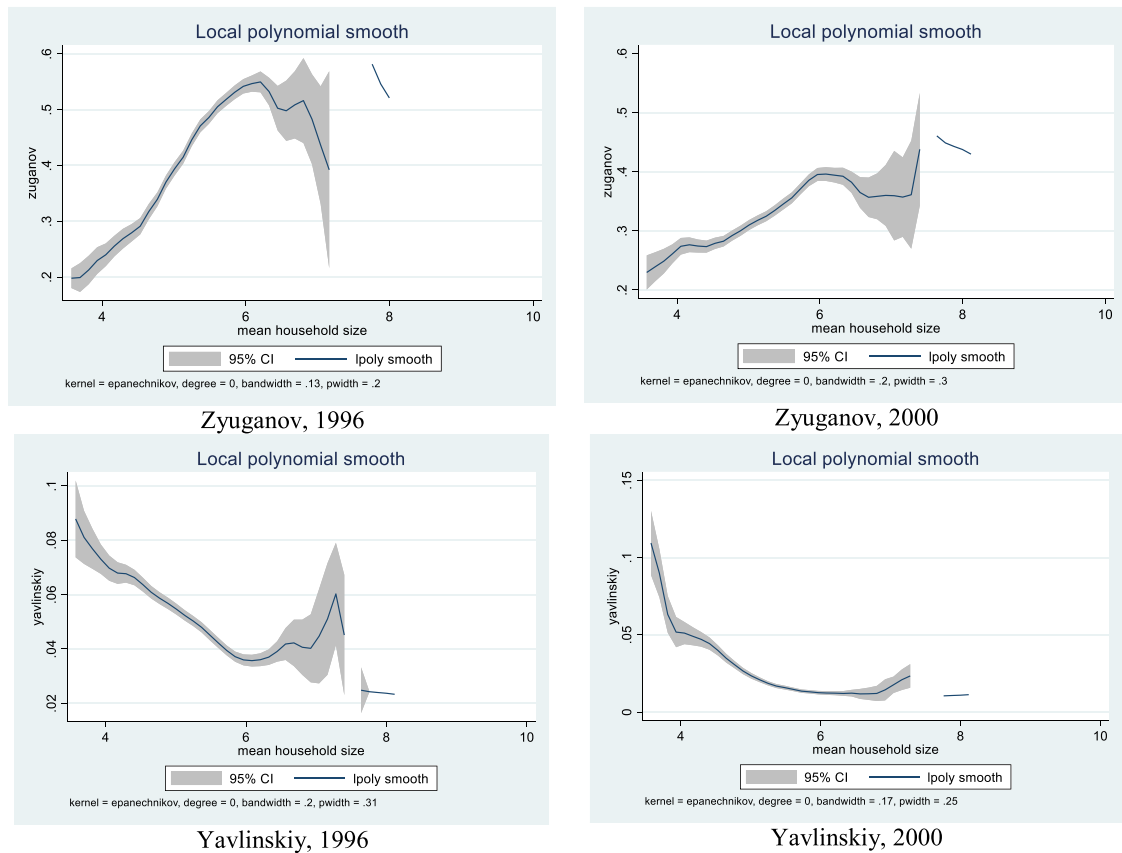
Fig. 4. Nonparametric association between MFS and the share of votes for Zyuganov and Yavlinskiy. *Note*: Observations with MFS smaller than 2 and larger than 15 are excluded to make the graphs easier to read.

5. Conclusion

The goal of this paper is to investigate the effect of family nuclearity on political behavior and, in particular, on voting for liberal parties. We offer two possible explanations of this effect: stronger individualistic values (which increase pro-liberal voting) vs. reliance on the extended family as an alternative power structure to the state (which reduces support for state redistribution). We use within-country comparisons of MFS at the district level in Russia (which improves the quality of our analysis in reducing the impact of unobserved variables) and conduct the first investigation of the effect of MFS at two points in time separated by almost a century. Although for the first point in time (1917), we can treat our findings as documenting the effect of contemporary MFS on outcomes, for the second, we study the impact of the legacy of historical MFS in triggering changes in values and behaviors, which survive subsequent historical discontinuities. In both cases, smaller MFS is associated with pro-liberal voting.

The results of our analysis provide evidence of long-term effects of family characteristics on political outcomes; our analysis of the persistence of effects over almost a century and use of a within-country analysis at a highly disaggregated (district) level make our results more convincing. The combination of purely historical analysis and analysis of historical persistence supports our hypotheses and confirms our results. At the same time, we acknowledge that our research faces a number of limitations. First, as with any single-country study, our paper has external validity problems; further studies that investigate similar patterns in other countries would therefore be valuable. Second, the strategy we use to address endogeneity issues is not perfect; caution requires us to regard our results as correlational, rather than causal. Nevertheless, even correlational evidence provides valuable insights into the political effects of family characteristics and their persistence over time.

Acknowledgments

Appendix A. Electoral support for major candidates in 1996/2000

(See here Appendix Table A1).

Table A1
Effect of the historical family structure on support for presidential candidates (%) during the 1996 and 2000 elections, other major candidates.

	(1) Share of votes for Zhirinovskiy	(2) Share of votes for Zhirinovskiy	(3) Share of votes for Zhirinovskiy	(4) Share of votes for Yeltsin	(5) Share of votes for Putin
	OLS	OLS	OLS	OLS	OLS
MFS (1897 census)	0.180	-0.306 * * *	-0.060	-7.027 * * *	-4.093 * * *
	(0.142)	(0.0585)	(0.082)	(0.720)	(0.564)
Children age 0–4 per woman age 15–44 (1897 census)	-6.752 * *	-1.766	-4.248 * * *	31.93 * * *	3.267
	(2.641)	(1.228)	(1.487)	(8.938)	(10.39)
Proxy for wealth (1897 census)	0.261 *	-0.0119	0.124	-1.339 *	-3.313 * * *
	(0.155)	(0.0542)	(0.0941)	(0.726)	(0.807)
Share of agricultural employment (1897 census)	6.081 * * *	1.396 * * *	3.727 * * *	-24.92 * * *	-15.87 * * *
	(1.099)	(0.368)	(0.631)	(4.856)	(5.021)
Dummy ethnic region (contemporary Russia)	-2.591 * * *	-0.842 * * *	-1.720 * * *	6.522 * * *	9.576 * * *
	(0.218)	(0.0804)	(0.119)	(1.024)	(0.992)
Time FE			YES		
Dummies federal districts	YES	YES	YES	YES	YES
Constant	6.196 * * *	4.885 * * *	7.609 * * *	68.64 * * *	82.17 * * *
	(1.851)	(0.791)	(1.040)	(8.365)	(7.951)
Number of observations	1521	1519	3040	1476	1519
R squared	0.343	0.443	0.588	0.353	0.299
Period	1996	2000	Pooled 1996/2000	1996	2000

Note: * * * $p < 0.01$, * * $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Appendix B. IV regressions

For a successful IV strategy, we require a variable that has a strong and significant effect on our explanatory variable (MFS) but, at the same time, is unrelated to any other characteristics of a locality, i.e., ideally determined by factors orthogonal to district characteristics. Weather shocks and their consequences are particularly often used as instruments to deal with endogeneity, because the orthogonality assumption is easy to justify in this case (Brückner and Ciccone, 2011; Miguel et al., 2004; Tertytchnaya and Lankina, 2020). Natural disasters, similarly, are used for causal identification in the social science literature (Baez and Santos, 2007; Lazarev et al., 2014; Nikolova and Marinov, 2017). We follow a similar approach and use exposure to the famine in 1891–1892 to identify exogenous variation in our explanatory variable.

The famine (Robbins, 1975; Simms, 1982; Smith, 1892) was caused by weather conditions (a dry autumn and extremely cold winter with little snow, as well as a dry summer) and particularly affected the Volga River basin and other regions in the empire. The famine may have led to as many as half a million deaths. As a consequence, the tsarist government called on the population to create voluntary organizations and send relief to affected territories. Grain loans to peasants from local institutions (both government bureaucracies and elected councils for administering local affairs called *zemstvo*) to the affected peasantry to help them replenish crops were a particularly important relief measure. In more successful years, the peasants were obligated to submit some of their crops to local authorities so that they could accumulate grain resources for distribution to the peasants in times of need. The Central Statistical Committee of the Ministry of the Interior of the Russian empire collected data on grain loans (*khlebnye ssudy*) extended during the famine; we use this information to identify the extent to which a district was affected by the famine.

We argue that the weather shocks that caused the famine affected the territory of the Russian empire in a way that was orthogonal to any other regional characteristics influencing (contemporary or future) political outcomes; at the same time, the famine could have had a significant impact on MFS. Specifically, on the one hand, the famine could have reduced MFSs due to the high death toll. On the other hand, the increasing availability of agricultural land (due to a decline in the population) could have triggered an increase in MFS to fully use new land available to the peasants (Clay and Johnson, 1992); furthermore, the death of family members may have forced blood relatives to form larger families in order to maintain agricultural production. Orphans may have also moved in with their surviving relatives, increasing MFS. There is some evidence of greater increases in the use of agricultural land by peasants as a consequence of the famine (Akul'shin, 2017).

From the perspective of the exclusion restriction, we acknowledge that the famine itself may have affected peasants' political behavior; however, although this issue is relevant to the 1917 elections (some twenty-five years after the famine; the literature documents that historical shocks could have had a persistent legacy; see, e.g., Rozenas and Zhukov, 2019), it is unlikely that legacy of the famine survived to 1996, given that over the preceding century (e.g., 1921–1922, 1932–1933, and 1946–1947), the Soviet population had suffered multiple other famines, as well as multiple other, substantially larger shocks and periods of prolonged hunger (e.g., during the Stalinist collectivization, the Russian Civil War, and World War II).

Table B1
The effect of the historical family structure on support for presidential candidates (%) during the 1996 and 2000 elections and of family structure on support for the Kadet party (%) during the 1917 elections, IV estimates.

	(1) Share of votes for Kadet 2SLS	(2) Share of votes for Zyuganov 2SLS	(3) Share of votes for Zyuganov 2SLS	(4) Share of votes for Zyuganov 2SLS	(5) Share of votes for Yavlinskiy 2SLS	(6) Share of votes for Yavlinskiy 2SLS	(7) Share of votes for Yavlinskiy 2SLS
MFS (1897 census)	-1.957***	23.22***	14.17***	18.69***	-2.078***	-1.703***	-1.889***
	(0.854)	(2.618)	(1.992)	(1.665)	(0.388)	(0.321)	(0.256)
Children age 0–4 per woman age 15–44 (1897 census)	-13.956***	-61.62***	-22.78**	-42.24***	5.336*	1.871	3.626**
	(5.706)	(15.19)	(11.51)	(9.930)	(2.852)	(2.270)	(1.843)
Proxy for wealth (1897 census)	-0.223	2.312*	2.745***	2.528***	-0.255*	0.550*	0.148
	(0.463)	(0.945)	(0.725)	(0.606)	(0.138)	(0.295)	(0.174)
Share of agricultural employment (1897 census)	-6.468	9.164	4.606	6.896	-2.900**	-1.734	-2.324**
	(3.938)	(6.909)	(5.423)	(4.485)	(1.157)	(1.623)	(1.046)
Dummy ethnic region (contemporary Russia)		-0.516	-5.870***	-3.185***	0.134	0.521***	0.324**
		(1.158)	(0.889)	(0.760)	(0.237)	(0.181)	(0.154)
Constraint	29.013***	-41.57***	-26.69***	-29.40***	13.83***	11.57***	14.03***
	(3.784)	(10.70)	(7.869)	(6.864)	(1.863)	(1.923)	(1.297)
Number of observations	385	1476	1474	2950	1476	1474	2950
F of excluded instruments	32.63***	129.82***	129.11***	260.02***	129.82***	129.11***	260.02***
R squared	0.33	0.37	0.18	0.32	0.21	0.35	0.39
Tsarist-era macroregion dummies	YES						
Federal districts dummies		YES	YES	YES	YES	YES	YES
Period	1917	1996	2000	Pooled 1996/2000	1996	2000	Pooled 1996/2000
Time FE				YES			YES

Note: $***p < 0.01$, $**p < 0.05$; $*p < 0.10$. Robust standard errors in parentheses.

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We use the share of people who received grain subsidies as our IV for the MFS and report the results in Appendix Table B1 (due to data availability issues, we omit some observations). The F-statistic for excluded instruments is substantially higher than 10 (the typically acceptable benchmark), confirming that our IVs are strong. The results of the IV estimations fully confirm the findings of the OLS estimations in terms of the sign and significance of the effect.

Appendix C. MFS and extended family

In this appendix, we report additional tests that validate our claim that MFS can be seen as an (imperfect) proxy for the spread of extended families. In particular, we argue that differences in fertility (and hence the number of minors in a family) do not necessarily lead to erroneous conclusions about the spread of extended families in a district using data on the MFS, as applied in this paper.

1. As mentioned, the best test for validating our claim is individual census data, which records the family status of individuals in a household. Unfortunately, these data are available only for the Tobolsk gubernia, as the data for almost all other regions did not survive. We used these data (available at https://person1897.histcensus.asu.ru) to test whether the MFS (as defined above) and the average number of blood relatives in a household, excluding children age 0–14, are correlated. The correlation coefficient is.79 and is significant at the 1% level (number of households = 16,415; number of settlements = 9).

2. Another test can be performed using data collected by Kravtsova et al. (2018), who assembled data on family structure using microdata from historical censuses in Western countries and Eastern Europe in the nineteenth century (IPUMS International and MOSAIC project). In this dataset, the variables MFS (as defined in this paper) and MFS, excluding children age 0–14, are both available. The variables are highly correlated: the correlation coefficient is.87 and is significant at the 1% level (the dataset covers 178 historical regions). It is highly unlikely that Russia is an abnormal case in Europe where this correlation would not hold.

3. In his work on the social history and demography and Russia, Mironov (2016, 2018: 664) similarly concludes that the size of a family can serve as a proxy for whether the family is a nuclear or an extended one (relying on evidence from local case studies). He concludes that families consisting of fewer than 5 people are usually nuclear, whereas those with 6 members are typically extended (nuclear family unit + unmarried relatives of the same generation) and those with 7 or more members are multigenerational (families with several marital couples). Thus, qualitative evidence on Russian history also supports our conclusions.

Appendix D. Marital unit per household

An alternative indicator suggested in the literature is the so-called marital unit per household (MUH). MUH is obtained by dividing the "absolute numbers of married, widowed and divorced males, as well as widowed and divorced females, by the total number of households in a given region" (Szołtysek et al., 2014). In Appendix Table D1, we replicate the results of the main regressions in this study, replacing the MFS with the MUH and estimating regressions using regions (*gubernia*), rather than districts, as the unit of observation (for districts, MUH data are not available). Hence, the main results hold (the regressions do not control for the number of children per woman, because MUH is an indicator explicitly calculated from the adult population).

Furthermore, Kravtsova et al. (2018), using a dataset of 178 European regions, correlated MUH and the indicator identical to one used in this paper (MFS), as well as the MFS, excluding children age 0–14. They found that all three indicators were significantly correlated with one another. Thus, the similarity of the results using MUH and MFS is not surprising.

Here, we should mention that MUH also faces several important problems. Parish and Schwartz (1972), which first introduced this measure, indicated that never married persons who live in the same household are included in the denominator but not in the numerator. Because the data we have do not distinguish between single households made up of widowed or divorced people and

Table D1
Effect of the historical family structure on the support for presidential candidates (%) during the 1996 and 2000 elections and of the family structure on the share of votes for the Kadet party (%) in 1917 elections, using MUH instead of MFS.

	(1) Share of votes for Kadets OLS	(2) Share of votes for Zyuganov OLS	(3) Share of votes for Yavlinskiy OLS
MUH (1897 census)	-6.132 **	0.218 * **	0.0182
	(2.608)	(0.0665)	(0.0159)
Share of agricultural employment (1897 census)	-34.65 *	0.0374	0.127 *
	(18.65)	(0.233)	(0.0756)
Proxy for wealth (1897 census)	-5.212	-0.0541	0.0304 **
	(3.789)	(0.0376)	(0.014)
Dummies federal districts		YES	YES
Dummies historical regions	YES		
Time FE		YES	YES
Constant	22.81 * **	0.105	-0.061
	(4.940)	-0.17	-0.0595
Observations	39	148	148
R-squared	0.420	0.429	0.455
Period	1917	Pooled 1996/2000	Pooled 1996/2000

Note: * ** $p < 0.01$, * * $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

never married people living separately, we cannot solve this problem, which could bias the MUH indicator. Furthermore, Szołtysek et al. (2014) indicates that MUH does not account for the horizontal extension of domestic groups, which results from the presence of unmarried siblings, aunts, uncles, nephews, etc., of the family head or that head's spouse.

Appendix E. Additional regressions

(See here Appendix Tables E1–E8).

Table E1
Effect of the family structure on the share of votes for the Kadet party (%) in 1917 elections, controlling for landscape characteristics and agricultural suitability.

	(1) OLS	(2) OLS
MFS (1897 census)	-0.601 **	-0.547 *
	(0.302)	(0.302)
Children age 0–4 per woman age 15–44 (1897 census)	-20.65 ***	-23.36 ***
	(5.635)	(5.480)
Proxy for wealth (1897 census)	0.0950	0.200
	(0.479)	(0.507)
Share of agricultural employment (1897 census)	-7.958 ***	-7.611 **
	(3.049)	(3.264)
Landscape dummies (mountains as reference group) (Moon, 2013)		
Coniferous forest		4.730 ***
		(1.366)
Mixed forest		1.491
		(1.262)
Forest steppe		1.199
		(1.218)
Steppe		1.193
		(1.257)
Caloric suitability (Galor and Özak, 2016)	-0.00184 ***	
	(0.000388)	
Constant	30.37 ***	27.08 ***
	(4.480)	(4.933)
Observations	420	403
R-squared	0.358	0.398

Note: *** $p < 0.01$, ** $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Table E2
Effect of the historical family structure on the support of presidential candidates (%) during the 1996 and 2000 elections, controlling for landscape characteristics and agricultural suitability, pooled data for 1996/2000.

	(1) Share of votes for Yavlinskiy OLS	(2) Share of votes for Yavlinskiy OLS	(3) Share of votes for Zyuganov OLS	(4) Share of votes for Zyuganov OLS
MFS (1897 census)	-0.867 ***	-0.652 ***	7.208 ***	5.628 ***
	(0.114)	(0.111)	(0.649)	(0.573)
Children age 0–4 per woman age 15–44 (1897 census)	1.039	-3.072 **	15.38 *	25.92 ***
	(1.976)	(1.386)	(9.089)	(5.947)
Proxy for wealth (1897 census)	0.00455	0.301	1.738 ***	1.494 ***
	(0.167)	(0.196)	(0.556)	(0.543)
Share of agricultural employment (1897 census)	-4.953 ***	-3.461 ***	16.50 ***	19.40 ***
	(1.048)	(1.099)	(3.784)	(3.610)
Landscape dummies (mountains as reference group) (Moon, 2013)				
Coniferous forest	2.011 ***		-4.540 *	
	(0.688)		(2.512)	
Mixed forest	0.729		7.367 ***	
	(0.668)		(2.479)	
Forest steppe	0.547		10.23 ***	
	(0.677)		(2.579)	
Steppe	-0.0242		10.23 ***	
	(0.680)		(2.551)	
Semidesert and desert	0.796		10.57 ***	
	(0.726)		(2.894)	

Table E2 (*continued*)

	(1) Share of votes for Yavlinskiy OLS	(2) Share of votes for Yavlinskiy OLS	(3) Share of votes for Zyuganov OLS	(4) Share of votes for Zyuganov OLS
Caloric suitability (Galor and Özak, 2016)		-0.000911 * **		0.00763 * **
		(0.000100)		(0.000488)
Constant	11.17 * **	14.09 * **	-23.37 * **	-28.35 * **
	(1.379)	(1.102)	(6.373)	(4.496)
Time FE	Yes	Yes	Yes	Yes
Observations	2518	2966	2518	2966
R-squared	0.409	0.397	0.459	0.385

Note: * ** *p* < 0.01, * * *p* < 0.05; * *p* < 0.10. Robust standard errors in parentheses.

Table E3

Effect of the historical family structure on the support for presidential candidates (%) during the 1996 and 2000 elections and of the family structure on the share of votes for the Kadet party (%) in 1917 elections, controlling for the share of men age 40–59.

	(1) Share of votes for Kadets	(2) Share of votes for Yavlinskiy	(3) Share of votes for Zyuganov
MFS (1897 census)	-1.260 * **	-1.077 * **	8.281 * **
	(0.374)	(0.120)	(0.672)
Children age 0–4 per woman age 15–44 (1897 census)	-20.10 * **	4.882 * *	-18.05 *
	(6.416)	(2.152)	(9.805)
Proxy for wealth (1897 census)	-0.505	0.635 * *	-0.133
	(0.442)	(0.256)	(0.624)
Share of agricultural employment (1897 census)	-10.31 * **	-1.425	9.186 * *
	(2.956)	(1.421)	(4.169)
Share of men age 40–59 (1897 census)	28.48	15.08 * *	-89.08 * **
	(20.75)	(6.568)	(29.13)
Dummies federal districts		YES	YES
Dummies historical regions	YES		
Time FE		YES	YES
Constant	27.61 * **	5.566 * *	23.48 * *
	(7.408)	(2.449)	(10.62)
Observations	380	2442	2442
R-squared	0.426	0.427	0.450
Period	1917	Pooled 1996/2000	Pooled 1996/2000

Note: * ** *p* < 0.01, * * *p* < 0.05; * *p* < 0.10. Robust standard errors in parentheses. Data for Semipalatinskaya, Stavropolskaya, Tobolskaya, Eniseyskaya, Tomskaya, Tomskaya, and Irkutskaya *gubernii* were not available.

Table E4

Effect of the family structure on the share of votes for the Kadet party (%) in the 1917 elections, controlling for the main religious groups and geographic characteristics.

	(1) OLS	(2) OLS
MFS (1897 census)	-0.854 ***	-0.828 **
	(0.329)	(0.347)
Children age 0–4 per woman age 15–44 (1897 census)	-19.36 ***	-20.21 ***
	(6.277)	(6.608)
Proxy for wealth (1897 census)	-0.698 *	-0.498
	(0.419)	(0.463)
Share of agricultural employment (1897 census)	-11.94 ***	-11.00 ***
	(2.822)	(3.024)
Less than 50 km to the main river (GSHHG)	-0.307	-0.288
	(0.337)	(0.337)
Less than 50 km to the sea (GSHHG)	1.275	1.910
	(1.277)	(1.319)
Elevation (GMTED)	-0.000955	-0.00185 **
	(0.00116)	(0.000884)
% Muslims (1897 census)		-0.0346 **
		(0.0143)
% Jews (1897 census)		-0.137 ***
		(0.0513)
% Old Believers (1897 census)		0.255 ***
		(0.0951)
% Protestants (1897 census)		0.0758
		(0.0564)
% Armenians (1897 census)		-0.185 *
		(0.111)
% Catholics (1897 census)		-0.0329 ***
		(0.0123)
Dummies for historical regions	YES	YES
Constant	30.85 ***	30.99 ***
	(4.833)	(5.094)
Observations	419	418
R-squared	0.373	0.413

Note: *** $p < 0.01$, ** $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses. GSHHG: Global Self-consistent, Hierarchical, High-resolution Geography Database, https://www.ngdc.noaa.gov/mgg/shorelines/; GSHHG: The Global Multi-resolution Terrain Elevation Data 2010 (GMTED2010), www.usgs.gov.

Table E5

Effect of the historical family structure on the support for Yavlinskiy (%) during the 1996 and 2000 elections, controlling for historical religions, geographic characteristics of historical units, modern economic and social development, and modern MFS.

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) OLS
MFS (1897 census)	-1.168 ***	-1.104 ***	-1.015 ***	-0.997 ***	-0.710 ***	-0.672 ***	-1.073 ***	-0.889 ***	-0.845 ***
	(0.135)	(0.148)	(0.167)	(0.165)	(0.194)	(0.209)	(0.109)	(0.124)	(0.148)
Children age 0–4 per woman age 15–44 (1897 census)	6.231 **	6.604 ***	2.232	-0.187	0.320	-5.646	3.219 *	3.920	-1.671
	(2.510)	(2.456)	(2.796)	(2.796)	(4.019)	(4.059)	(1.890)	(2.409)	(2.804)
Proxy for wealth (1897 census)	-0.0688	-0.284	-0.353 **	1.021 ***	0.117	0.186	0.466 **	-0.108	-0.0851
	(0.171)	(0.175)	(0.167)	(0.352)	(0.266)	(0.229)	(0.214)	(0.161)	(0.156)
Share of agricultural employment (1897 census)	-3.903 ***	-4.951 ***	-2.533 *	-0.569	-3.160	0.945	-2.344 *	-4.299 ***	-0.809
	(1.163)	(1.323)	(1.322)	(2.108)	(2.220)	(1.954)	(1.283)	(1.317)	(1.331)
Less than 50 km to the main river (GSHHG)	0.340 *	-0.231	-0.331	-0.0601	-0.0492	-0.0495	0.145	-0.129	-0.194
	(0.194)	(0.185)	(0.204)	(0.146)	(0.163)	(0.144)	(0.124)	(0.128)	(0.137)
Less than 50 km to the sea (GSHHG)	15.16 ***	13.44	1.030	8.160 ***	40.35 *	19.93	11.55 ***	27.66 **	10.82
	(3.871)	(18.63)	(11.88)	(2.680)	(20.75)	(15.50)	(3.396)	(13.84)	(9.962)
Elevation (GMTED)	-0.00112	-0.00164 ***	-0.00156 *	0.00159	0.000738	0.000721	8.72e-05	-0.000710	-0.000426
	(0.000741)	(0.000599)	(0.000843)	(0.00134)	(0.00180)	(0.00135)	(0.000778)	(0.000932)	(0.000864)
% Muslims (1897 census)	-0.00705	0.00415	0.00678	-0.00141	9.81e-05	0.00328	-0.00393	0.00265	0.00504
	(0.00597)	(0.00595)	(0.00538)	(0.00446)	(0.00712)	(0.00472)	(0.00374)	(0.00473)	(0.00380)
% Jews (1897 census)	-0.342 ***	-0.354 ***	-0.310 ***	-0.287 ***	-0.191 ***	-0.109 ***	-0.316 ***	-0.274 ***	-0.210 ***
	(0.0542)	(0.0425)	(0.0388)	(0.0515)	(0.0411)	(0.0413)	(0.0406)	(0.0338)	(0.0352)
% Armenians (1897 census)	-214.3 ***	-199.7	35.45	-115.5 ***	-597.8 **	-268.4	-163.5 ***	-410.4 **	-121.3
	(57.53)	(270.0)	(172.8)	(41.16)	(302.1)	(224.5)	(50.03)	(201.1)	(144.4)
% Old Believers (1897 census)	-0.0702 ***	-0.0412	0.0348	-0.0775 ***	-0.0790 **	-0.00798	-0.0716 ***	-0.0565 **	0.0132
	(0.0263)	(0.0265)	(0.0258)	(0.0244)	(0.0377)	(0.0266)	(0.0182)	(0.0237)	(0.0194)
% Catholics (1897 census)	0.439	0.429 **	0.423	0.459 **	0.133	0.0359	0.440 **	0.259 *	0.226
	(0.289)	(0.212)	(0.264)	(0.201)	(0.201)	(0.146)	(0.182)	(0.149)	(0.153)
% Protestants (1897 census)	-0.168	-0.136 *	-0.142	-0.118 *	-0.0220	0.00531	-0.141 **	-0.0726	-0.0675
	(0.105)	(0.0724)	(0.0883)	(0.0690)	(0.0680)	(0.0509)	(0.0651)	(0.0511)	(0.0522)
Contemporary MFS (Rosstat, 2010)		-0.235	0.00464		1.409 **	1.407		0.567	0.701
		(0.414)	(0.481)		(0.683)	(0.855)		(0.429)	(0.550)
Contemporary number of children per woman (Rosstat, 2012)		-2.003 *	0.896		-2.632 ***	0.693		-2.284 ***	0.787
		(1.168)	(1.297)		(0.789)	(0.695)		(0.716)	(0.778)
Share of urban population, 2012 (Lankina and Libman, 2021)			0.0208 ***			0.00972 ***			0.0152 ***
			(0.00248)			(0.00195)			(0.00168)
Number of doctors per capita, 2012 (Lankina and Libman, 2021)			0.000368 *			-4.40e-05			0.000156
			(0.000214)			(0.000354)			(0.000214)

Table E5 (*continued*)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) OLS
Share of population with university degree, 2012 (Lankina and Libman, 2021)			0.0115***			0.0138***			0.0125***
			(0.00358)			(0.00497)			(0.00343)
Income per capita, 2012 (Lankina and Libman, 2021)			4.01e-05**			0.000101***			6.97e-05***
			(1.78e-05)			(2.29e-05)			(1.60e-05)
Housing construction, 2012 (Lankina and Libman, 2021)			-5.56e-06***			-6.59e-09			-2.98e-06
			(2.14e-06)			(3.31e-06)			(2.26e-06)
Retail trade turnover, 2012 (Lankina and Libman, 2021)			0.0119			0.00340			0.00984
			(0.0184)			(0.0202)			(0.0157)
Dummy ethnic regions (contemporary Russia)	0.407*	0.952***	1.059***	0.377**	0.259	-0.196	0.389***	0.614***	0.436
	(0.237)	(0.265)	(0.303)	(0.159)	(0.261)	(0.356)	(0.148)	(0.201)	(0.266)
Dummies for federal districts	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	9.080***	10.33***	6.920***	8.239***	5.091***	1.757	9.901***	8.852***	5.796***
	(1.958)	(1.836)	(1.963)	(2.106)	(1.534)	(1.651)	(1.405)	(1.228)	(1.381)
Observations	1484	1092	810	1482	1090	809	2966	2182	1619
R-squared	0.267	0.381	0.555	0.387	0.298	0.596	0.415	0.483	0.638
Period	1996	1996	1996	2000	2000	2000	Pooled 1996/2000	Pooled 1996/2000	Pooled 1996/2000

Note: The data for the contemporary characteristics of districts (housing, income, etc.) were extracted by Lankina and Libman (2021) from the Russian municipal statistics. Unfortunately, the information in this dataset is highly incomplete and differs greatly across regions. Thus, Lankina and Libman assembled the dataset in the following way: they collected data for the date, which would be as close as possible to 2012, depending on the data availability for individual regions. Income is calculated as an unweighted average of income per capita across various industries in the district. Earlier data (for the 1990 s and early 2000 s) are unavailable. $*** p < 0.01$, $** p < 0.05$; $* p < 0.10$. Robust standard errors in parentheses.

Table E6

Effect of the historical family structure on support for Zyuganov (%) during the 1996 and 2000 elections, controlling for historical religions, geographic characteristics of historical units, modern economic and social development, and modern MFS.

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) OLS
MFS (1897 census)	10.36 ***	8.432 ***	7.172 ***	5.647 ***	3.987 ***	3.400 ***	7.995 ***	6.211 ***	5.272 ***
	(1.005)	(1.176)	(1.262)	(0.616)	(0.717)	(0.791)	(0.586)	(0.682)	(0.726)
Children age 0–4 per woman age 15–44 (1897 census)	-24.86 **	-35.96 ***	-32.24 **	-1.600	-20.19 *	-46.34 ***	-13.42 *	-28.05 ***	-38.89 ***
	(11.59)	(13.85)	(13.76)	(8.673)	(11.08)	(12.59)	(7.915)	(9.746)	(9.667)
Proxy for wealth (1897 census)	0.0121	0.656	-0.0157	1.327 **	2.055 ***	1.198	0.679	1.354 **	0.580
	(0.905)	(1.183)	(0.885)	(0.635)	(0.771)	(0.754)	(0.563)	(0.682)	(0.617)
Share of agricultural employment (1897 census)	21.29 ***	27.22 ***	9.295	14.16 ***	21.23 ***	16.97 ***	17.83 ***	24.21 ***	13.06 ***
	(6.047)	(7.992)	(6.616)	(4.462)	(5.885)	(5.855)	(3.839)	(4.939)	(4.636)
Less than 50 km to the main river (GSHHG)	0.252	2.412 ***	0.965	-2.373 ***	-1.252	-2.927 ***	-1.066 *	0.580	-0.983
	(0.831)	(0.868)	(0.851)	(0.717)	(0.841)	(0.967)	(0.572)	(0.635)	(0.685)
Less than 50 km to the sea (GSHHG)	14.55	111.3	207.6 **	23.08 *	315.5 **	291.5 **	18.92 **	213.4 **	251.7 ***
	(17.58)	(115.1)	(95.10)	(11.83)	(138.1)	(130.2)	(9.549)	(85.31)	(82.22)
Elevation (GMTED)	-0.00336	0.00149	0.00417	-0.00203	0.00237	0.00284	-0.00255	0.00192	0.00349
	(0.00303)	(0.00423)	(0.00343)	(0.00242)	(0.00266)	(0.00317)	(0.00207)	(0.00277)	(0.00235)
% Muslims (1897 census)	0.105 ***	0.0253	-0.0300	0.00824	-0.0756 ***	-0.0642 **	0.0565 ***	-0.0251	-0.0469 **
	(0.0322)	(0.0383)	(0.0284)	(0.0238)	(0.0287)	(0.0311)	(0.0213)	(0.0249)	(0.0223)
% Jews (1897 census)	1.050 ***	0.846 ***	1.126 ***	1.330 ***	1.159 ***	1.755 ***	1.192 ***	1.002 ***	1.436 ***
	(0.274)	(0.291)	(0.263)	(0.354)	(0.387)	(0.319)	(0.228)	(0.250)	(0.220)
% Armenians (1897 census)	-171.9	-1530	-3149	-214.9	-4425 **	-4214 **	-194.7	-2978 **	-3712 ***
	(264.1)	(1676)	(1384)	(176.5)	(2005)	(1886)	(144.3)	(1239)	(1192)
% Old Believers (1897 census)	0.161	-0.0130	-0.0714	0.317 ***	0.189 *	0.197	0.237 **	0.0881	0.0617
	(0.158)	(0.124)	(0.121)	(0.0887)	(0.0972)	(0.147)	(0.0988)	(0.103)	(0.0981)
% Catholics (1897 census)	0.437	1.643 *	1.772 **	0.551	1.999 **	2.601 **	0.503	1.820 **	2.185 ***
	(0.716)	(0.978)	(0.850)	(0.722)	(0.984)	(1.227)	(0.512)	(0.711)	(0.756)
% Protestants (1897 census)	0.175	-0.478	-0.449	-0.423 *	-1.111 ***	-1.288 ***	-0.126	-0.794 ***	-0.868 ***
	(0.240)	(0.327)	(0.285)	(0.251)	(0.343)	(0.418)	(0.170)	(0.243)	(0.257)
Contemporary MFS (Rosstat, 2010)		-3.703 *	-1.840		-1.544	-0.717		-2.631 *	-1.262
		(2.118)	(2.490)		(1.546)	(2.183)		(1.390)	(1.889)
Contemporary number of children per woman (Rosstat, 2012)		2.808	-7.128		13.39 ***	6.415		8.101 **	-0.409
		(5.252)	(5.864)		(4.283)	(5.438)		(3.456)	(4.108)
Share of urban population, 2012 (Lankina and Libman, 2021)			-0.0760 ***			-0.0340 **			-0.0548 ***
			(0.0127)			(0.0144)			(0.00990)
Number of doctors per capita, 2012 (Lankina and Libman, 2021)			-0.00140 **			-0.00108			-0.00128 *
			(0.000564)			(0.000939)			(0.000700)

Table E6 (*continued*)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) OLS
Share of population with university degree, 2012 (Lankina and Libman, 2021)			-0.0133			0.0448***			0.0155
			(0.0131)			(0.0126)			(0.0102)
Income per capita, 2012 (Lankina and Libman, 2021)			-0.000674***			-0.000468***			-0.000578***
			(6.41e-05)			(6.96e-05)			(5.41e-05)
Housing construction, 2012 (Lankina and Libman, 2021)			2.08e-05***			1.32e-05*			1.59e-05**
			(5.58e-06)			(7.60e-06)			(6.52e-06)
Retail trade turnover, 2012 (Lankina and Libman, 2021)			-0.0296			-0.0407			-0.0224
			(0.0427)			(0.0588)			(0.0444)
Dummy ethnic regions (contemporary Russia)	-1.624	-3.562***	1.721	-7.216***	-9.394***	-2.864**	-4.417***	-6.476***	-0.568
	(1.095)	(1.203)	(1.268)	(0.902)	(1.108)	(1.273)	(0.728)	(0.848)	(0.942)
Dummies for federal districts	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time FE							YES	YES	YES
Constant	-5.327	17.58*	45.13***	-1.201	15.80*	43.35***	-9.412***	-11.63***	-9.719***
	(8.567)	(10.44)	(10.32)	(6.510)	(8.293)	(9.447)	(0.396)	(0.436)	(0.458)
Observations	1484	1092	810	1482	1090	809	2966	2182	1619
R-squared	0.513	0.488	0.637	0.322	0.319	0.349	0.440	0.456	0.515
Period	1996	1996	1996	2000	2000	2000	Pooled 1996/2000	Pooled 1996/2000	Pooled 1996/2000

Note: The data for the contemporary characteristics of districts (housing, income, etc.) were extracted by Lankina and Libman (2021) from the Russian municipal statistics. Unfortunately, the information in this dataset is highly incomplete and differs greatly across regions. Thus, Lankina and Libman assembled the dataset in the following way: they collected data for the date, which would be as close as possible to 2012, depending on the data availability for individual regions. Income is calculated as an unweighted average of income per capita across various industries in the district. Earlier data (for the 1990 s and early 2000 s) are unavailable. *** $p < 0.01$, ** $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Table E7

Effect of the historical family structure on support for presidential candidates (%) during the 1996 and 2000 elections and of the family structure on the share of votes for the Kadet party (%) in 1917 elections, controlling for the share of never-married women.

	(1) Share of votes for Kadets OLS	(2) Share of votes for Yavlinskiy OLS	(3) Share of votes for Zyuganov OLS
MFS (1897 census)	-0.782 * *	-1.130 * **	8.186 * **
	(0.315)	(0.115)	(0.590)
Children age 0–4 per woman age 15–44 (1897 census)	-17.89 * **	1.646	-13.48 *
	(6.011)	(1.552)	(7.318)
Proxy for wealth (1897 census)	-0.616	0.416 * *	0.705
	(0.444)	(0.201)	(0.564)
Share of agricultural employment (1897 census)	-11.71 * **	-2.267 * *	15.62 * **
	(2.988)	(1.138)	(3.693)
% of never-married women age 20–29 (1897 census)	4.151 * **	0.0743	-2.804
	(1.226)	(0.343)	(2.473)
Dummies for federal districts		YES	YES
Dummies for historical regions	YES		
Time FE		YES	YES
Constant	28.22 * **	11.25 * **	2.334
	(4.682)	(1.259)	(5.544)
Observations	422	2962	2962
R-squared	0.386	0.402	0.418
Period	1917	Pooled 1996/2000	Pooled 1996/2000

Note: * ** $p < 0.01$, * * $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Table E8

Effect of the historical family structure on support for presidential candidates (%) during the 1996 and 2000 elections and of the family structure on the share of votes for the Kadet party (%) in 1917 elections, dropping potentially collinear controls.

	(1) Share of votes for Kadets OLS	(2) Share of votes for Kadets OLS	(3) Share of votes for Yavlinskiy OLS	(4) Share of votes for Yavlinskiy OLS	(5) Share of votes for Zyuganov OLS	(6) Share of votes for Zyuganov OLS
MFS (1897 census)	-0.939 * **	-1.219 * **	-1.160 * **	0.00674	8.272 * **	0.968 * **
	(0.339)	(0.346)	(0.109)	(0.0432)	(0.545)	(0.252)
Children age 0–4 per woman age 15–44 (1897 census)	-18.98 * **	-19.70 * **	1.577	-4.508 * **	-13.75 * *	25.47 * **
	(6.086)	(6.363)	(1.448)	(1.540)	(6.662)	(8.240)
Proxy for wealth (1897 census)	-8.016 * **		-4.435 * **		11.18 * **	
	(1.369)		(0.418)		(1.728)	
Share of agricultural employment (1897 census)		1.017 * **		1.012 * **		-3.397 * **
		(0.247)		(0.0739)		(0.274)
Dummies historical regions	YES	YES				
Dummies federal districts			YES	YES	YES	YES
Time FE			YES	YES	YES	YES
Constant	28.35 * **	25.37 * **	12.85 * **	8.102 * **	4.276	22.67 * **
	(4.300)	(4.772)	(1.057)	(1.139)	(4.774)	(6.109)
Observations	426	422	3046	3070	3046	3070
R-squared	0.366	0.340	0.398	0.362	0.410	0.334
Period	1917	1917	Pooled 1996/2000	Pooled 1996/2000	Pooled 1996/2000	Pooled 1996/2000

Note: * ** $p < 0.01$, * * $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Appendix F. Spatial econometrics

In the first step in our analysis, we calculate measures for spatial association in the MFS in our data (using the sample of contemporary Russian *rayony* to make the results more compatible with the next steps in our research). Indeed, MFS exhibits strong spatial correlation: Moran's I is 0.194 (and is significant at the 1% level), and Geary's C is 0.835 (and is equally significant at the 1% level).

To deal with the problem of spatial correlation in the residuals, we replicate our main regressions for the 1996 and 2000 elections using spatial lag and spatial error models. The spatial weights matrix is the inverse distance matrix constructed using QGIS from the Open Street Map (https://en.wikipedia.org/wiki/OpenStreetMap/). The distance we use is the geographic distance between the capitals of the *rayony*. Appendix Tables F1 and F2 report the spatial lag and the spatial error regressions: as expected, the term measuring spatial correlation of the residuals (rho and lambda) is highly significant, and the effects of the MFS on voting remain robust, reassuring us of the validity of our findings.

Table F1
Effect of the historical family structure on support for presidential candidates (%) during the 1996 elections, spatial lag and spatial error models.

	(1) Share of votes for Yavlinskiy ML	(2) Share of votes for Yavlinskiy ML	(3) Share of votes for Zyuganov ML	(4) Share of votes for Zyuganov ML
MFS (1897 census)	-0.809 ***	-0.968 ***	7.187 ***	8.290 ***
	(0.121)	(0.148)	(0.752)	(0.982)
Children age 0–4 per woman age 15–44 (1897 census)	0.999	0.349	-12.404	-8.431
	(2.118)	(2.304)	(9.547)	(10.672)
Proxy for wealth (1897 census)	-0.243 *	-0.327 **	1.636 **	1.890 **
	(0.129)	(0.135)	(0.773)	(0.831)
Share of agricultural employment (1897 census)	-4.406 ***	-5.101 ***	28.972 ***	31.237 ***
	(0.921)	(0.380)	(4.927)	(5.385)
Dummy for ethnic region (contemporary Russia)	0.232	0.166	-1.190	-0.872
	(0.215)	(0.232)	(0.923)	(1.002)
Dummies for federal districts	YES	YES	YES	YES
Constant	5.848 ***	14.888 ***	-43.876 ***	-41.432
	(1.766)	(4.808)	(8.005)	(45.549)
Lambda		0.985 ***		0.992 ***
Rho	0.985 ***		0.993 ***	

Note: *** $p < 0.01$, ** $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Table F2
Effect of the historical family structure on support for presidential candidates (%) during the 2000 elections, spatial lag and spatial error models.

	(1) Share of votes for Yavlinskiy ML	(2) Share of votes for Yavlinskiy ML	(3) Share of votes for Zyuganov ML	(4) Share of votes for Zyuganov ML
MFS (1897 census)	-0.680 ***	-0.856 ***	3.771 ***	4.583 ***
	(0.138)	(0.171)	(0.480)	(0.594)
Children age 0–4 per woman age 15–44 (1897 census)	-1.012	-1.416	7.172	8.000
	(1.806)	(1.964)	(7.452)	(8.277)
Proxy for wealth (1897 census)	0.351	0.331	2.043 ***	2.093 ***
	(0.226)	(0.250)	(0.693)	(0.740)
Share of agricultural employment (1897 census)	-2.939 **	-3.213 **	17.817 ***	17.509 ***
	(1.331)	(1.474)	(4.297)	(4.616)
Dummy for ethnic region (contemporary Russia)	0.501 ***	0.446 ***	-6.292 ***	-6.853 ***
	(0.171)	(0.184)	(0.802)	(0.860)
Dummies for federal districts	YES	YES	YES	YES
Constant	5.378 ***	7.369 ***	-32.585 ***	-21.883
	(1.599)	(0.014)	(6.519)	(29.817)
Lambda		0.987 ***		0.989 ***
Rho	0.989 ***		0.989 ***	

Note: *** $p < 0.01$, ** $p < 0.05$; * $p < 0.10$. Robust standard errors in parentheses.

Appendix G. Household divisions

We also considered an alternative proxy for the spread of individualism or collectivism in the Russian regions: the number of household divisions (*razdel*), i.e., cases in which blood relatives who previously cohabitated in one household established two or several new households (Frierson, 1987). However, this proxy is also imperfect: to a large extent, it depends on the initial MFS in the region. In regions with larger MFS, size divisions may occur more frequently. Conversely, in regions where nuclear families prevail (for various reasons: worse agricultural conditions, special regulations of the aristocracy that owned the land, and, until the Great Reforms [abolition of serfdom in Russia in 1861] exercising direct power over their peasants, higher death rates, lower fertility or higher outmigration), household divisions might be a very rare event. Available data on household divisions (1874; see the data published in *Zakonodatelnye materialy po voprosam otnosyashimsya k ustroistvu selskogo chozyaistva, Izdanie zemskogo otdela ministerstva vnutrennich del [Legislative materials concerning the organization of the agriculture. Published by the zemstvo division of the Ministry of the Interior]* St. Petersburg, 1899) support this conclusion. The correlation between the MFS and the percentage of divisions in the total number of families in a region is 0.33 (significant at the 1% level).

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