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Persistent effects of empires: Evidence from the partitions of Poland

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Abstract

We use spatial regression discontinuity analysis to test whether the historical partition of Poland among three empires—Russia, Austria-Hungary, and Prussia—has a persistent effect on political outcomes in contemporary Poland and to examine the channels of this influence. We find that the main difference in voting across Polish territories attributed by many observers to the legacy of empires is driven by omitted variables. However, empires do have a significant causal effect. The lands that belonged to Prussia (compared with those that belonged to Russia) vote more for anticommunist (post-Solidarity) parties. This difference is largely explained by the persistent effect of infrastructure built by Prussians at the time of industrialization. The former Austrian lands (compared with former Russian lands) votes more for religious conservatives and for liberals. The difference in the vote for religious conservatives is explained by persistent differences in church attendance driven by vastly different policies of the two empires toward the Catholic Church. Higher support for liberals on the Austrian side is partly explained by a persistent belief in democracy, which is a legacy of decentralized democratic governance of the Austrian empire.

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1. Introduction

A growing body of economic and political science literature documents important links between distant historical events and current economic and political outcomes (see, e.g., the survey by Nunn 2009). The channels of transmission include economic and technological shocks (e.g., Comin et al. 2010), which set different areas on different development paths; persistence of formal institutions, such as legal origins or constraints on executive power (La Porta et al. 1998, Acemoglu et al. 2001); and persistence of informal institutions, such as cultural norms, transmitted from generation to generation (e.g., Bisin and Verdier 2000, Voigtlaender and Voth 2012, Grosfeld et al. 2013).

Cases that allow a clean evaluation of historical legacies for economic and political development are fairly rare, as historical variation is often blurred by omitted factors and preselection. Poland is one of these rare exceptions. For over a century, Poland lost its sovereignty and was divided among three imperial powers: the Russian empire, the Kingdom of Prussia (later, the German empire), and the Habsburg empire (later, the Austrian empire and Austria-Hungary). We establish a persistent causal effect of former empires on political outcomes in contemporary Poland and examine their cultural and economic roots using spatial regression discontinuity analysis.

Historians have documented that the empires differed sharply in their policies toward their Polish territories. Prussia, which was more developed economically, industrialized its Polish part substantially more than Russia and Austria (Wolf 2007). The Habsburg empire, in contrast to both Prussia and Russia, gave substantial administrative and cultural autonomy to its Polish territories (Schulze 2000, 2007; Wolff 2010). Despite that both Russian and Prussian regimes were based on political and cultural oppression, Russia stood out in terms of interfering in religious life, and in particular, its severe oppression of the Catholic Church (Davies 2005). As these drastically differing economic and social policies were applied for over a century in areas that belonged initially to the same country, with a common ethnic mix, culture, and formal institutions, the partitions of Poland could be considered a giant historical experiment. The partition borders were exogenously imposed on Polish lands and driven by the relative military strength of the three empires. The exact location of the borders was, essentially, the result of a historical accident independent of the

conditions on the ground at the time (as we discuss in the next section). Figure 1.1 shows the borders of the final—and the longest-lasting—partition, established by the Congress of Vienna in 1815, and formally in force until 1918. Both before and after the "partition experiment," the areas around the borders of the empires belonged to the unified sovereign Polish states (the Polish-Lithuanian Commonwealth before, and the Second Polish Republic after).

Partitions were just one episode in a series of turbulent historical events in Poland. In particular, during the Second World War, much of the population perished through the Holocaust and armed conflict. After the war, the country's boundaries were moved westward by about 200 kilometers, triggering mass population exchanges with Ukraine, Belarus, and Lithuania and mass migration of Poles to the territories gained from Germany in 1945. Figure 1.2 illustrates the location of the newly acquired Western and Northern territories. In the aftermath of the Second World War, Poland, which once had a multiethnic population, became extremely homogenous in terms of ethnicity and religion. (Ethnic Poles comprise 94% of the population; 95.8% of the population consider themselves Roman Catholic, and 94.5% report that they use the Polish language at home. [1]) Importantly, however, the Second World War affected territories close to the partition borders similarly, and the mass population movements concentrated in territories away from these borders. This relative stability and the similarity of conditions on the two sides of the partition borders both before and after the "partition experiment" allow us to identify the effect of empire legacies on contemporary Polish outcomes.[2]

This paper pursues two goals. First, we test the claim, widely discussed but never formally tested, that voting in Poland is, to a large extent, determined by the legacy of partitions. Second, we examine the mechanisms of empire influence and show which economic and cultural legacies explain the presence of empires on the Polish political map today.

Both casual observers and political scientists noted the difference in the vote shares for main Polish political parties between areas formerly belonging to the three empires (e.g., Bartkowski 2003; Zarycki 1999, 2000, 2007; Janicki and Wladyka 2005;

[1] GUS 2011, 2012; Alesina et al. 2003.

[2] We use the word *partition* here as it is commonly used elsewhere, to denote both the split itself and the territories into which Poland was split.

Sleszynski 2007). In particular, it is usually pointed out that voters in formerly Prussian areas tend to favor liberals (i.e., they vote for the Civic Platform party, *PO*), whereas voters in areas formally under Russian and Austrian rule tend to favor religious conservatives (i.e., they vote for the "Law and Justice" party, *PiS*). This pattern is often attributed to empire legacies. However, this particular spatial pattern could be due to many other factors, such as proximity to the West, which is often associated with higher familiarity with liberal ideas, and proximity to the northern seaports, which may affect political support for liberalism through its effect on trade. In order to attribute any of the spatial differences in voting to the causal influence of the empires, one needs to uncover discontinuities in the spatial pattern of voting at the empire borders. Such discontinuities cannot be explained by factors unrelated to empire influence, because these other factors are supposed to change smoothly across space. Thus, we use spatial regression discontinuity analysis to estimate discontinuous jumps in voting patterns at the empire borders. We focus on two of the three empire borders, (1) between Russia and Prussia, and (2) between Russia and Austria, both of which are long enough to enable us to estimate the jumps. The border between Prussia and Austria is too short to yield enough observations to gain statistical power. As we restrict analysis to territories in immediate proximity to the empire borders, which is standard in the regression discontinuity analysis, we do not need to worry about the effects of mass migration that took place after the Second World War—our sample covers only areas where population was relatively stable throughout history.

Formal empirical investigation yields an interesting result: the main claim about empire legacies for Polish political outcomes, which became common knowledge, is not correct. In particular, it is not the case that the legacy of the Prussian empire, compared with the Russian and Austrian empires, manifests itself in voting more for liberals (*PO*) and less for religious conservatives (*PiS*). Apparent differences in political support for liberals and religious conservatives between the former Prussian area and the rest of Poland are driven by the overall continuous, smooth spatial pattern of lower conservative and higher liberal voting as one moves toward the north and west and away from the south and east. This pattern can, for instance, be explained by the proximity to the West and to the Baltic Sea. We find that the vote shares for the liberal party (*PO*) and for religious conservative party (*PiS*) change smoothly at the border between the Russian and Prussian empires. As there is

no jump in the share of vote for PO vs. PiS at the partition border, one cannot attribute the difference in political preference for liberals vs. religious conservatives to empire legacies.

This does not mean, however, that empires do not affect political outcomes. In order to conceptualize the effect of empires, we consider two main dimensions in the political space in Poland: (1) liberalism, which includes both economic and cultural aspects, with the main divide between the main liberal party, PO, and the main religious conservative party, PiS; and (2) the attitude toward the communist past, with the main divide between, on the one hand, parties formed on the basis of anti-communist Solidarity movement, namely, both the liberal PO and the religious conservative PiS, and, on the other hand, parties formed on the basis of those present during the communist period, such as the main left party, SLD, and the main peasant party, PSL. As mentioned above, we find no effect of Russian vs. Prussian empires on voting along the liberal dimension. But the empires do have an effect on voting along the cleavage defined by the attitude toward the communist past. In particular, we find a discontinuous jump at the border between the Russian and the Prussian partitions in voting for anti-communist parties, which is higher in the Prussian part, and voting for post-communist parties, which is higher in the Russian part.

In contrast, the legacies of the Austrian and Russian empires matter along both dimensions: the population of the formerly Russian territories votes more for the post-communist parties and less for the anti-communist parties compared with the Austrian part and there is a discontinuous jump in these political preferences at the border. The population on the Austrian side also seems to have a higher preference for liberalism, as the positive jump in the vote for conservatives is substantially smaller in magnitude than the positive jump in political support for liberals, once the border is crossed from the Russian into the Austrian territory. Finally, we find that there is a significantly higher turnout in formerly Austrian empire compared with turnout in the Russian empire.

The second goal of this paper is to shed light on the mechanisms of empire influence on political outcomes. The analysis involves two stages. First, for an array of characteristics proxying for potential economic and cultural legacies of the empires, such as measures of economic development and infrastructure, education, religiosity, attitudes toward democracy and toward violating the law, trust, generalized trust in

government, and xenophobia, we test whether they exhibit discontinuous jumps at the empire borders.

Consistent with historical narratives about the empires, we find evidence of a long-term effect of the following characteristics. First, higher economic development in the Prussian empire proved to be persistent. Railway infrastructure (in large part developed during industrialization) is substantially denser today in the Prussian part compared with the Russian part, which is reflected in a discontinuous jump at the partition border of various measures of access to the railway network. Local industrial production per capita also jumps up once the border between the Russian and Prussian empires is crossed into Prussia. We also find that religiosity jumps down once the partition borders are crossed into the Russian empire, both from the Austrian and from the Prussian sides. The reason is that the predominantly Orthodox Christian Russian empire had an organized policy of oppression of Catholicism, undermining trust in the Catholic Church on its territories. In addition, the population on the Austrian side of the Russia-Austria border today has a (discontinuously) more positive view of democracy compared to the population on the Russian side of the border (despite the general spatial pattern of lower preference for democracy toward the South, which we find in the data). This is consistent with the persistent effect of the Habsburgs' governance institutions on attitudes toward democracy. Austria was the only empire of the three to allow Poles to participate in local governance, and it was also the first to introduce local democratic institutions that enfranchised the Polish population. The experience of democracy at the national and local levels has been shown to have persistent effects on the attitudes toward democracy and the creation of the so-called democratic capital (Persson and Tabellini 2009, Giuliano and Nunn 2013).

The second step in the analysis of the mechanisms of empire influence is to test whether the jumps in political outcomes are reduced (or disappear) once we directly control for the potential channels. We find that the variation in the few variables that jump at the borders go a long way in explaining the jump in political outcomes. In particular, controlling for industrial production and rail availability—our proxies for industrial development—substantially reduces the wedge between the Prussian and the Russian partitions in preferences for parties with different attitudes toward the communist past. Once we include proxies for the infrastructure and industrial development in the parametric RD specification as covariates, the jump

in voting for anti-communist and post-communist parties between Russia and Prussia is substantially reduced and becomes insignificant. Both differences in religiosity and attitudes toward democracy help explain differences in political preferences between the Russian and Austrian parts of Poland. The higher vote for religious conservatives (*PiS*), the lower vote for the post-communist parties (*SLD* and *PSL*), and the higher turnout in areas formerly under Austrian domination are almost entirely explained by higher religiosity in Austria compared with Russia. In contrast, the magnitude of the jump in the vote for the liberals (*PO*) in Austria (compared with Russia) is only slightly reduced by controlling for the attitude toward democracy, which is positively correlated with the vote for liberals. The fact that we cannot fully explain higher liberal vote in Austria is not surprising, however, as we have only a very crude proxy for the legacy of the Habsburg's respect for local autonomy and self-governance, which, as we hypothesize, was conducive to creation of an open, liberal culture.

Under the historically plausible assumption of exogeneity and arbitrariness of the partition borders, a jump in any outcome at the border can be attributed to the causal legacy of empires. An important caveat in our analysis, however, is that the absence of the jump in contemporary outcomes does not mean that empires do not affect these outcomes. The reason for this is that both people and capital could in principle move freely across the partition borders since the reestablishment of Polish sovereignty. However, when there is no discontinuity of outcomes at the partition borders, one cannot disentangle the influence of empires from the influence of other potential determinants of differences in outcomes across space. Moreover, there seem to be no accounts of mobility right across partition borders in Poland (despite some evidence of migration from rural areas to the large Polish cities, GUS 2003). Thus, we focus on regression discontinuity, as this is the only methodology that ensures estimating causal effect.

Our findings contribute to the literature on persistence and long-term effects of history on development (see, for instance, Putnam 1993; Grief 1994, 2006; La Porta et al. 1998; Sokoloff and Engerman 2000; Acemoglu et al. 2001; Guiso et al. 2006, 2008, 2012; Nunn 2008; Jha 2008; Grosjean 2010; Tabellini 2010; Durante 2010; Nunn and Wantchekon 2011; Acemoglu et al. 2012; Voigtländer and Voth 2012; Alesina, Giuliano, and Nunn 2013; and other work surveyed by Nunn 2009). Our work is closely related to the studies of empire legacies on contemporary European outcomes. Grosjean (2011a) shows that having being subjected to the same imperial

institutions in the past leads to significant increase in cultural similarity today between different locations, controlling for characteristics of the localities and distances between them. Grosjean (2011b) shows that the Ottoman rule had persistent negative effects on financial development through Islamic restrictions on lending. Becker et al. (2012) show that former Habsburg rule has a persistent effect on trust in government institutions and reduces perception of corruption of courts and police in Eastern European states.

Our paper differs from this literature in three ways. First, the detailed data at a very high frequency within a single country allows cleaner identification of the empire influences, as we can estimate RD at much closer distances to the borders compared to previous studies.[3] Second, our paper is the first to consider political outcomes in addition to economic and cultural ones. Third, we consider the multitude of institutional, economic, and cultural factors, which potentially could be traced back to the historical differences across empires, and show which cultural, institutional, and infrastructure differences actually persist and which do not.[4] In particular, we find that differences in democratic capital, i.e., the belief that democracy is the best political system, have persisted despite the 45 years of non-democratic socialist Poland; whereas differences in social capital, trust in government, and attitudes toward violating the law among the three empires did not survive the socialist treatment. Interestingly, though infrastructure tends to last (if it's not destroyed), not all types of infrastructure may have a persistent effect on political views of the population: only some of them retain economic value, while others become obsolete. For example, industrialization triggered the development of wide networks of railroads and canals, but unlike railroads, few of the canals are used today for transporting goods.

The paper proceeds as follows: The next section presents an overview of the historical body of knowledge about the most striking differences in social and economic policies of the three empires toward the Polish territories under their control. Section 3 characterizes the political space in Poland and highlights the main political cleavages. Section 4 describes the data. Section 5 estimates the discontinuity

[3] Methodologically, our paper is closest to Grosfeld et al. 2013, who apply spatial regression discontinuity to examine the jump in contemporary attitudes at the Pale of Settlement border.

[4] For instance, economic historians documented fast economic integration of the three parts of partitioned Poland after reunification, despite the absence of trade among them prior to 1918 (e.g., Trenkler and Wolf 2005).

in voting shares of the main political parties at the partition borders. Section 6 studies how the social and economic legacies of the empires help explain the influence of the empires on political outcomes. We conclude in section 7.

2. Partition of Poland among the three Empires

2.1. Boundaries

The Polish-Lithuanian Commonwealth (PLC) existed as a sovereign state for more than two centuries before it disappeared from the map of Europe in 1795. It was divided between three imperial powers: the Russian empire, the Kingdom of Prussia, and the Austrian empire. Three partitions of Poland—in 1772, 1793, and 1795—represent the series of territorial seizures by the empires caused by the political, military, and economic decline of the Polish state throughout the eighteenth century. As a result of the partitions, Poland lost sovereignty for 123 years. Historians have documented the reasons, process, and geographical boundaries of the partitions (see, for instance, Eversley 1915 and Davies 2005). The Napoleonic wars changed the bargaining position of the three powers, which eventually resulted in a substantial revision of the division of the territory among the empires. The Congress of Vienna of 1815 established new borders for what is often referred to as the Fourth Partition of Poland. There were several relatively minor revisions of borders after 1815 (such as the Austrian annexation of Cracow in 1846) and a revision of the extent of imperial control over some territories (such as the transformation of the autonomous Kingdom of Poland into Vistuland, under Russian control, and the complete subordination of the Grand Duchy of Poznan to Prussia). However, most of the boundaries set by the Congress of Vienna remained in place until 1918. (We show them in Figure 1.1.)

The exact location of the frontiers was largely determined by natural boundaries, in particular, small rivers, as reflected by the Final Act of the Congress of Vienna (Hansard 1816, pp. 71–131; Wandycz 1974, p. 11). The bargaining over territories among the major European powers during the Congress of Vienna (described, for instance, in Nicolson 1946) suggests that there is no reason to believe that social and economic outcomes at that time exhibited any jumps at the established frontiers. At the same time, considerable evidence exists that these borders were

enforced at least on the side of the Russian empire (Davies 2005, p. 71). The guard was stationed along the Empire border, with fairly high density (i.e., every ten yards) in areas of expected tension. Travelers in all ports, roads, railway stations, and hotels were subject to search and questioning. Historians document substantial activity of smuggling agencies at all Russian empire borders, which ensured some commercial and human traffic across the frontiers. However, this traffic was unprecedentedly low in comparison with other European borders due to border-enforcement efforts on the Russian side.

2.2. Differences across partitions

The three empires differed in economic development, political institutions, culture, and, as a result, economic and social policies toward their Polish territories. Historical research presents a careful account both of differences among empires (see, for instance, Ingrao 2000, Taylor 1948, Gregory 1994, Blanke 1981) and how they affected Polish lands (Davies 2001, 2005; Wandycz 1974; Wolff 2010).

The Russian empire was the most oppressive of the three in terms of cultural and social policies. Under Russian domination, the Polish territories (the Kingdom of Poland) were considered fully integrated with the empire, which pursued policies aimed at full standardization, conformity, and assimilation without any regard to Polish culture and traditions. The Polish language was forbidden in churches and schools (Eversley 1915). Teaching was entirely in Russian, and Polish was taught as a foreign language using Russian books. Censorship was pervasive and affected all books in Polish as well as any books covering such sensitive subjects as Catholic theology or political freedoms and democracy. Non-orthodox religions were subject to persecution and oppression. "Religious dissent was equated with treason," (Davies 2005, p. 63). After the January 1863 uprising, Russian authorities reacted violently to the support obtained by insurgents from lower clergy: priests were severely persecuted (many were murdered or sent to Siberia), most of the monasteries were closed, and church property was confiscated. Consequently, the number of priests declined between 1864 and 1874, from 1,638 to 264 (Aubert et al. 1975). All social, cultural, and church initiatives were severely punished by tsarist authorities. In this situation, higher clergy considered collaboration with Russia as a lesser evil. This undermined trust in the Catholic Church, as bishops were seen as traitors by ordinary

people and by the lower clergy. In addition, the pressure on the Catholic Church by Russian authorities led to substantially reduced involvement of priests in local social life and in the provision of public goods in local communities compared with the territories of the other two empires.

The Prussian empire was also characterized by cultural and political oppression of its Polish population; however, such oppression was briefer and less pervasive than that of the Russian empire. The Prussian cultural and social policies took a distinct turn in 1871 with the enactment of *Kulturkampf* ("culture struggle") by Otto von Bismarck. Before 1871, the Prussian empire was characterized by relative religious and cultural tolerance (at least compared with the Russian empire). The limitations on Catholics in predominantly protestant Prussia were informal and fairly mild. There was little oppression of Polish schools (but they were not getting support from the government, unlike German schools). Starting in 1871, Germanization was enforced at all levels, German education became mandatory, geographical names were changed, a third of Catholic monasteries and convents were closed, and many priests were imprisoned or exiled. In their harshest form, these policies lasted for only a decade; however, oppression of Polish culture in the Prussian partition lasted until the end of the Prussian empire.

Many historians suggested that Russification and Germanization policies had somewhat different effects on Poles. Russification, despite being the most consistent (over time) and the harshest attempt to establish political and cultural integration, was also the most violently opposed, as in the Polish eyes the Russian power represented a backward, uncivilized regime, which led to widespread, fierce resistance (see, for instance, Davies 2005, p. 80). In contrast, the effect of Germanization on Poles was more complex. It created tension between the willingness to preserve Polish national identity and the recognition of the efficiency of German political and economic institutions and, in particular, law and order for modernization. Unlike in the Kingdom of Poland, the rates of voluntary assimilation under the Prussian rule were relatively high (although Germanization policies also triggered a lot of resistance).

In sharp contrast to the Prussian and Russian partitions, in Galicia (the Austrian part of the Polish territories) Poles were subjected to the most liberal law of nineteenth-century Europe. The Habsburgs gave unprecedented administrative and cultural autonomy to their Polish territories. In Galicia, Catholics practiced freely, as

the empire was predominantly Catholic, but religious tolerance applied to Jews as well. Polish-language schools were common. Poles were allowed to participate in local administration and to forge a career in government. In the second half of the nineteenth century, Polish became the official language in Galicia and an official self-governance body, *Sejm Krajowy*, a special parliament made up of Poles, was formed. Censorship was also abolished in the late eighteenth century. "In the realm of public works, justice, and education, it wielded effective powers. It was the only institution in the Polish lands at that time which gave an effective share in government to even part of the Polish population," (Davies 2005, p. 111). The freedoms that Poles enjoyed in the Austrian partition led to fast development of intellectual and cultural life, incomparable to the other two partitions, where Polish intellectual writings were forbidden (Eversley 1915, Taylor 1948, Wolff 2010).

Because the Industrial Revolution occurred when Poland was divided among the three Empires, differences in the scale and depth of industrialization among the three empires had an important effect on economic development of the three parts of Poland. Prussia industrialized its Polish territory more and faster than either Russia or Austria. In particular, Prussia completed substantially more big-scale infrastructure projects in its Polish territories than did its counterparts. For example, by the end of the eighteenth century, Prussian Poland had larger railway network than the other two partitions (Davies 2005, p. 121). In contrast to Prussia and Russia, Galicia remained the most backward and predominantly agricultural of the three parts until reunification in 1918 (Pobog-Malinowski 2004, Wolf 2007).

Both Austrian and Prussian Poles were exposed to administration that was, by and large, efficient, honest, predictable, and based on universal and impersonal rules (even though some of these rules, especially in the Prussian empire, were anti-Polish). In contrast, Poles under Russian rule were often subject to idiosyncratic and corrupt administration without rule-of-law guidelines. Historians have suggested that Poles in the Austrian partition trusted government more than populations of the other partitions did (Taylor 1948).

Polish historians and politicians (e.g., Pobog-Malinowski 2004, Pilsudski 1963) have also suggested that partitions had an important effect on the lives of the Polish population. Pilsudski (1963) even claimed that by the turn of the twentieth century, three different types of Poles were formed in the three empires, each characterized by distinct mentality, habits, and way of life.

Potentially, all economic, social, and cultural differences between empires, described by historians and outlined above, may have persistent effects on contemporary economic outcomes and cultural traits, which, in turn, may influence political outcomes. However, some differences among empires are more likely to persist over time than others: differences in infrastructure (such as railway networks) and cultural attributes that are transmitted through generations via family upbringing (such as religiosity) are more likely to persist than differences in education or attitudes toward government. The latter were more affected by a unified, intensive communist rule during the 45 years of the People's Republic of Poland and depend not only on the past, but also on current policies.[5]

2.3. The borders of empires versus the borders of the Second Polish Republic and contemporary Poland

Poland regained independence and was called the Second Polish Republic from 1918 to 1939, between the collapse of the three partitioning powers at the end of the First World War and the beginning of the Second World War, when it was divided between Europe's two most powerful dictatorships, the Third Reich and the Soviet Union. The frontier of this new division almost coincides with the Eastern border of the current Polish territory.

Following the Yalta Conference, in February 1945, Poland's borders were entirely redrawn; they have not changed since then. Poland's western and eastern frontiers were moved about 200 kilometers westward; the Soviet Union annexed Eastern territories of the Second Polish Republic, while Poland got some prewar German territories. We refer to these territorial gains as the "Western and Northern territories." They were populated mainly by ethnic Germans and have not belonged to Poland for nine centuries. Poles mass-migrated to the Western and Northern territories both from the lands lost to the Soviet Union and from the rest of Poland. According to the 1950 census, 79% of the population of the Western and Northern territories were migrants who lived outside these territories in 1939. In contrast, only 10% of the population of the current Polish territories, excluding the Western

[5] Becker et al. (2012) do find that Habsburg Empire has a persistent effect on trust in government in Eastern European countries.

and Northern territories, came from other provinces in Poland or from abroad.[6] As the aim of our paper is to estimate the persistent effects of partitions in Poland, we focus exclusively on those borders and areas that had relatively stable population; we therefore exclude the Western and Northern territories from our analysis.

3. Political space in contemporary Poland

Poland became a democracy as a result of the collapse of the communist regime in 1989. The first decade of the new democratic Poland marked a transition from a very young to a more consolidated and mature democracy. Three parliamentary elections took place during this period. In the first democratic election, in 1991, more than 100 political parties participated, and not a single party got more than 13% of votes. Party platforms were not well articulated, voters found it hard to situate themselves in the political space, and partisan alliances had yet to form. It took about a decade for political parties to consolidate. Our focus is on the second decade, as it represents a much more stable period, which helps to characterize political space in terms of the main political cleavages.

We consider the last four parliamentary elections, which took place in 2001, 2005, 2007, and 2011. Only four political parties participated in all four of these elections and got representation in each of the elected parliaments: Civic Platform (*Platforma Obywatelska*, PO), Law and Justice (*Prawo i Sprawiedliwość*, PiS), Polish People's Party (*Polskie Stronnictwo Ludowe*, PSL), and Alliance of Democratic Left (*Sojusz Lewicy Demokratycznej*, SLD). Table A.1 shows the percentages of votes obtained by each of these parties in each of the elections since 2000. The percentages differ greatly, but far less than during the previous decade.

Political scientists who have characterized the political space in Poland (see, for instance, Grabowska 2004, Markowski 1997, Zarycki 2000) focus on different political cleavages and often refer to them differently, but they can all be summarized by the following three ideological dimensions: (1) the extent of economic liberalism (e.g., the attitude toward the role of the regulatory state in the economy, the size of the public sector, and redistribution); (2) the extent of cultural freedom and tolerance (e.g., the attitude toward the role of religion in public life and the extent of

[6] GUS 1955.

intervention of the Catholic Church in social policymaking, and its stands on abortion, euthanasia, and same-sex partnerships); and (3) the attitude toward the communist past (e.g., positions on lustration and de-communization).

The two main political parties in Poland, PO and PiS, have roots in the anti-communist opposition and Solidarity movement; during the transition, they supported policies of lustration and de-communization, although to a different extent. But, PO and PiS diverge in their positions on economic and cultural freedoms. PO has a liberal economic agenda. It supports limiting the role of the state in the economy, deregulation, and decentralization, and advocates (relatively) low redistribution. On the cultural dimension, PO stands for the separation of church and state as well as for religious and sexual tolerance. Henceforth, we refer to PO as "liberals." In contrast, PiS stands for a market economy with significant interventionism by a strong state and advocates (relatively) high redistribution.[7] In terms of cultural values, PiS supports traditional social order and, in particular, traditional family values, and it accepts the Catholic Church as an important player in state affairs. It accepts the current very restrictive abortion law and fights against legalization of euthanasia and recognition of homosexual unions; it also proposes restoring the death penalty. Henceforth, we refer to PiS as "religious conservatives."

The two remaining parties, SLD and PSL, can be referred to as "post-communist" parties, as they are heirs of parties that existed during communist times. SLD has its roots in the ruling party during the communist times, the Polish United Workers' Party (Polska Zjednoczona Partia Robotnicza, PZPR). PSL has its roots in a small agrarian party, the United People's Party (Zjednoczone Stronnictwo Ludowe, ZSL), which was a satellite of the main ruling party.

The two parties opposed de-communization policies. Despite a similar attitude toward the communist past, these parties differ as far as the economic and cultural freedoms are concerned. On the cultural front, SLD is very liberal: it supports legalizing abortion for social reasons and opposes restitution of Catholic Church property. Despite being an heir of the communist party, SLD denies any connections to communist ideology. SLD accepts the market economy but believes in maintaining the social welfare state. Henceforth, we refer to SLD as the "left." The PSL has a somewhat similar position to religious conservatives (PiS), both culturally and

[7] One needs to note that the PiS's attitude toward economic liberalism changed throughout the 2000s, as it moved toward an increasingly more interventionist policy platform.

economically (with the exception of the attitude toward the death penalty). However, as PSL's primary economic objective is lobbying for agricultural subsidies, it has a somewhat more narrowly defined economic agenda.[8]

Chart A of figure A.1 schematically presents the relative positions of the four parties along the three dimensions. There is a political divide on each dimension: the distances between the two parties in the middle are larger than the distances between parties at each of the extremes on all three axes.[9] As the pairs of parties on the two extremes (left vs. right) coincide for cultural and economic liberalism, to simplify matters, one can consider that these dimensions together represent the ideological divide between economic and cultural liberalism versus economic and cultural conservatism, with PO and SLD on the one side, and PiS and PSL on the other side. Culture plays a more important role in defining this divide for two reasons. First, the divide is more profound in the attitudes toward cultural freedom than toward economic freedom because parties are positioned more uniformly on the economic-freedom axis. Second, the differences between party positions at the two extremes on the economic-freedom axis are much smaller than on the cultural-freedom axis, which is equivalent to saying that the scale on the economic-freedom axis is much finer than on the cultural-freedom axis.[10]

We adopt a stylized framework, in which the main political cleavages of the second decade of Polish democratic politics are described by two dimensions. The first cleavage is described by the extent of liberalism (with economic and cultural freedoms moving together). PO and SLD are characterized as "liberals," whereas PiS and PSL are characterized as "conservatives" according to this cleavage. The second cleavage divides parties according to their attitude toward the communist past. PO and PiS are characterized as post-Solidarity or anti-communist parties, whereas PSL and SLD are characterized as post-communist parties. We illustrate these cleavages in Chart B of figure A.1.

[8] As the PSL is an agrarian party of narrow special interests, it often enters coalitions with parties that are ideologically distant in exchange for benefits to its narrow constituency.

[9] For example, on the cultural-freedom axis, the distance between the PO and the PSL is greater than distances between the PO and the SLD on the left or between the PSL and the PiS on the right.

[10] See for instance Markowski (2007).

4. Data and variables

We use four types of data: official electoral statistics, census and Central Statistical Office (GUS) data, survey data, and geographical data. In this section, we describe their sources and the variables that we use.

Election data: Data for the last four parliamentary elections in Poland (2001, 2005, 2007, and 2011) come from the official electoral commission (*Panstwowa Komisja Wyborcza*, PKW, http://pkw.gov.pl/). Election results are reported at the lowest administrative unit (*NTS-5*, *gmina*), analogous to a municipality. For each of the four parties that won seats in each of the four elections (PO, PiS, SLD, and PSL), we take the percentage of the total vote, and we also use data on turnout. For each administrative unit, we know whether it is classified as rural, urban, or a large city with over 100,000 inhabitants.

Census data and GUS data: We use the 2002 Census to measure the size of each municipality (natural logarithm of total population), and the percentage of the population with at least secondary education. Measures of unemployment and industrial production per capita at municipal level come from the official website of the Polish Central Statistical Office (http://www.stat.gov.pl/gus).

Social Diagnosis Survey data on attitudes: Using individual-level responses from the Social Diagnosis Survey (http://www.diagnoza.com), we constructed a list of attitudinal and cultural measures at the level of *powiat* (*NTS-4*), analogous to a county. In particular, we use the following variables: (1) a fraction of people in each county who attend mass every week; (2) a fraction of people in each county who prefer democracy over autocratic regime; (3) a fraction of people who agree with the statement "People of foreign origin have too much to say in Poland"; (4) a fraction of people who respond positively to the standard generalized trust question, namely, whether "most people can be trusted, or, one cannot be too careful in dealing with people"; (5) a fraction of people who trust the government; and (6) a fraction of people who have a negative attitude toward violating the law. The first four of these measures are aggregates of individual responses to a single question. The sixth one summarizes the several responses to the following question: "How much do you care if someone evades taxes, avoids paying for public transportation, avoids paying for electricity, wrongly obtains unemployment benefits, does not pay rent for their flat, smuggles goods from abroad?" Respondents gave answers on a scale of 1 to 4, with 1

meaning "I do not care at all" and 4 meaning "I care a lot." We created a variable equal to the mean of the per-respondent sum of answers to all questions about attitudes toward violating the law.

Geographic data: We used various historical sources to create digital maps of the partitions of Poland and of the Western and Northern territories. We assigned each municipality (*gmina*) in contemporary Poland to one of the three empires (Russian, Austrian, or Prussian) as defined by the Congress of Vienna in 1815, and to the Western and Northern territories.[11] Using the centroid of each municipality, we calculated distances in kilometers to each of the partition borders and recorded their latitude and longitude. We also calculated how many different railways were located within 15 km of the centroid of each municipality in 2005.

Summary statistics for all variables for the full sample and various sub-samples are reported in Table A.2 in the appendix.

5. Do empires matter for political outcomes?

5.1. Average differences

Many political scientists have argued that the political map of Poland matches well the borders of the former empires (e.g., Grabowska et al. 1996; Kowalski 2000; Zarycki 2007). In this section, we briefly illustrate their claims. Figure 2 presents electoral results for liberals (PO) and religious conservatives (PiS) by municipality (*gminy*) in 2005 and 2007. Indeed, it is apparent from the map that religious conservatives got more votes in the Austrian and Russian parts, while liberals got more votes in the Prussian part. To confirm these average differences, in Table 1 we present the results of OLS regressions on a pooled sample of four elections, in which vote shares for each of the parties and turnout is regressed on dummies for the Austrian and Prussian empires (the Russian empire being a comparison group), a dummy for the Western and Northern territories (WNT), and election dummies. We cluster error terms at the county (*powiaty*) level. Coefficients on empire dummies indicate that average differences across empires are statistically significant. This, of

[11] We take into account several (relatively minor) changes in administrative division that took place during our observation period, 2001 to 2011. A few municipalities located right on the borders and that cannot be allocated to one of the empires were dropped from the sample.

course, does not imply causal effect of empires on contemporary outcomes, as spatial differences can be driven by many confounding factors. Thus, we turn to regression discontinuity (RD) analysis.

5.2. Regression discontinuity analysis

The main assumption behind the RD identification strategy is that in the absence of causal influence of empires, one expects the spatial pattern of political outcomes to be smooth at the partition borders, as these borders do not correspond to any preexisting discontinuous differences and were set fairly arbitrarily by the partition powers. We make this assumption relying on the historical evidence about the bargaining over partition borders during the Congress of Vienna. This assumption is essentially untestable, as there are no historical data to back it up; however, the historical account of border formation is consistent with this assumption. Thus, even though average differences across empires can be explained by many confounding factors, the estimation of discontinuous jumps at the borders reduces the influence of these factors essentially to zero. Henceforth, we consider all variables that exhibit a significant jump at the borders as outcomes of the empire influence.

In order to estimate RD at the borders of empires, we need to choose a bandwidth (i.e., the neighborhood of a border included in the sample) that is small enough to give a sufficiently good fit to the linear control functions of the distance to the border (i.e., our forcing variable) but sufficiently large to have enough statistical power to estimate the jump (e.g., Lee and Lemieux, 2010). As a baseline, we use a bandwidth of 60 kilometers, just sufficient to have 4.5 rows of municipalities on both sides of the border on average [as the mean diameter of a municipality (*gmina*) is about 13 km]. Figure 3 illustrates the samples within 60 kilometers of each of the considered partition borders. Below, we also show that within this bandwidth, linear approximation of the relationship between the considered outcomes and the distance to the borders fits the data very closely.[12]

Social scientists have discussed many determinants of voting behavior in Poland (e.g., Raciborski 1997, Sleszynski 2007). Urban areas and, in particular, large cities vote more for liberal parties. There is also an overall spatial pattern, the share

[12] Figure A.4 in the appendix presents the results of McCrary density tests.

of vote for liberal parties decreases and the share of vote for religious conservatives increases as one moves from North-West to South-East. In addition, political preferences and, as a result, vote shares of different parties were changing from election to election as democracy was maturing. We verify that none of these factors jump at the partition borders using a nonparametric local linear RD (Imbens and Lemieux, 2008). Table 2 reports local Wald estimates of the jumps in latitude, longitude, large-city dummy (i.e., a dummy for cities with a population above 100,000) and urban municipality dummy at the two partition borders. None of them is statistically significant and, as expected, the point estimates are very small.

In our regression analysis, we control for these important determinants of voting behavior as well as for election dummies using a parametric linear RD approach because this makes the RD estimates more precise without affecting their magnitude. On the two subsamples of municipalities that lie no more than 60 kilometers from each of the partition borders, we run the following regressions: $y_{it} = \alpha_1 Empire_i + \delta_1 Dist_i + \delta_2 Dist_i Empire_i + \varphi_t + \mathbf{X}_i'\gamma + \varepsilon_{it}$, where *i* denotes municipalities, *t* indexes elections, y_{it} is a political outcome (e.g., a vote share for a party), $Empire_i$ is a dummy indicating the Austrian or Prussian empire, depending on the particular partition border sample, so that the Russian empire is always the comparison group, $Dist_i$ is the distance from the municipality centroid to the partition border, φ_t is the set of election fixed effects, and $\mathbf{X}_i$ is a vector of control variables, including latitude, longitude, urban-municipality dummy, and large-city dummy. We cluster error terms ε_{it} by county (*powiat*), recognizing the possibility of the correlation between errors within municipality, over time, and across municipalities within a single county. Our focus is on α_1, which estimates the discontinuous jump in the outcome y_{it} at the partition border. Table 3 presents numerical estimates of α_1 and Figures 4 and 5 graphically illustrate the discontinuities in political outcomes by showing voting results at various distances around partition borders. The figures present simple averages of outcomes for municipalities located every three kilometers from partition borders and a nonparametric, locally-weighted regression line (without controls).

First, let us consider the Russia-Prussia border. Contrary to the common view that the Prussian empire's political legacy manifests itself in the higher number of votes for liberals, we find no discontinuity in voting for liberals at this border. It is

best illustrated by a smooth, continuous increase in the vote for the main liberal party (PO) as opposed to the main religious conservative party (PiS) once the border is crossed from Russia into Prussia (see Chart C on Figure 4, which presents the vote for PO in the two-party PO-PiS vote, i.e., calculated as if other parties did not exist). One can see that, on average, liberals (PO) get a much lower support in the Kingdom of Poland (the Russian part) compared to the Prussian part, but this difference is driven entirely by the overall spatial pattern without any visible break at the border of the two empires. The estimates of the discontinuous jumps at the border are insignificant and rather small for all parties, with the exception of the left (SLD), whose vote share drops discontinuously once the border is crossed from the Russian into the Prussian partition (see the first five columns in the upper panel of Table 3). The votes for both the main liberal party (PO) and the main religious conservative party (PiS) have positive point estimates of the jump (as the border is crossed into Prussia), while both the peasant party (PSL) and the left (SLD) have negative point estimates. Thus, if we consider votes for the groups of parties according to the existing political cleavages (as reported in the last four columns of the table), we find that the political support for anti-communist parties (PO and PiS together) and for post-communist parties (SLD and PSL together) do exhibit significant jumps at the Russia-Prussia border. In particular, the anti-communist vote jumps up and the post-communist vote jumps down by 4 percentage points as the border is crossed into Prussia. These discontinuities are illustrated in Charts D and E of Figure 4. In contrast to the cleavage defined by the attitude toward the communist past, the liberal versus cultural conservative cleavage is not affected by the Russia-Prussia partition border (as presented in the last two columns in the upper panel of Table 3 and in Chart F of Figure 4), which is, of course, consistent with no border effect on the two-party preference between PO and PiS.[13]

Now let us turn to the Russia-Austria border. The lower panel of Table 3 presents the results and figure 5 illustrates them. Vote shares for turnout and all major parties, with one exception, exhibit significant discontinuous jumps at this border. As the border is crossed into Galicia (the Austrian share) from the Kingdom of Poland (the Russian share), we observe a discontinuous increase in the vote for liberals (PO), in the vote for religious conservatives (PiS), and in turnout, and there is

[13] Figure A.2 presents the graphs of the jumps at the border for the remaining variables of interest not featured in Figure 4.

also a discontinuous drop in the vote for the peasant party (PSL). The point estimate of the jump for the left (SLD) is negative and statistically insignificant. The results by political cleavages reveal that as the border is crossed into Austria, the political support for post-communist parties significantly drops and the political support for anti-communist parties significantly increases. The point estimates of these jumps are very large: 11 and 13 percentage points of the total vote, respectively. The estimate of the jump in the vote for the two parties that can be considered as culturally liberal (PO and SLD together) is positive and also statistically significant (i.e., the vote for liberals increases by 5 percentage points as the border is crossed into Austria), despite the negative insignificant jump for SLD. Turnout jumps by about 2 percentage points.[14]

Overall, we find a significant causal effect of empires on political outcomes in Poland: first, the Russian part today votes significantly more for post-communist parties and significantly less for post-Solidarity parties compared to the Prussian and Austrian areas; second, voters on the Russian side are also significantly less liberal in their political preferences compared to those on the Austrian side.

As empires differ greatly along many dimensions, it is important to understand the channels of these political legacies.

6. The channels of empire influence

6.1. Persistent differences across empires in economic development and culture

As we discussed in Section 2.2, policies of the three empires toward their respective Polish lands, as well as both formal and informal institutions established by empires in these lands, differed greatly during the partition era. Potentially, each of these differences could have a lasting effect translating into persistent differences in political outcomes. In order to understand why empires matter for politics in Poland almost a century after reunification, we undertake analysis in two steps. First, we study which of the social, economic, and cultural factors exhibit discontinuities at the

[14] Note that figures 4, 5, and A.2 present averages of the raw data +/- 100 kilometers to each of the two partition borders. These graphs allow us to see whether the assumption of a linear relationship between forcing variable and the outcomes at the 60-kilometer bandwidth is reasonable. In all cases, linear approximation seems to be very close to reality.

borders of empires. Then, we test whether the factors that do exhibit the jump help explain differences in political outcomes.

We consider the following set of potential channels: religiosity, measured by the share of the population that attends mass every week at the county level; economic development, summarized by four municipality-level variables (industrial production per capita, railway network availability within a 15-kilometer radius from the center of the municipality, the unemployment rate, and the average wage as a percentage of the average national wage; education level, measured by the share of adult population with at least secondary education; and various cultural attitudes, such as preference for democracy, trust in government, generalized trust, attitudes toward violating the law, and tolerance toward foreigners.

Table 4 reports the estimates of discontinuous jumps at the partition borders for each potential channel. To generate these results, we apply the same RD specification as in regressions for political outcomes reported in Table 3. We find that only few variables exhibit significant jumps at the borders. In particular, for the Prussia-Russia border, we find significant jumps in religiosity (lower on the Russian side) and in two of the four measures of economic development, industrial production per capita and railway network availability (also lower on the Russian side). Average municipal wages and unemployment move smoothly at the border. In addition, we find no persistent effect of the Russia-Prussia border on education or any cultural attributes other than religiosity.

For the Russia-Austria border, we find no border effects for economic variables or education. But we do find significant jumps at the border for religiosity and the attitude toward democracy (both of which jump up as the border is crossed into Austria). Other cultural attributes exhibit no significant jumps at the Russia-Austria border. Figure 6 illustrates the discontinuity at the border for those potential channels that do exhibit jumps and figure A.2 in the appendix shows the spatial patterns for trust and trust in government as examples of potential channels that do not display a significant jump at the borders.

Our findings confirm that not all differences between empires are likely to have lasting effects. Despite differences in education and policies of the three empires, education levels are similar, probably because the education system has been unified for a long time. The same argument can be made about, for instance, trust in government. However, Becker et al. (2012) do find lasting positive effects of

the Austrian empire on trust in government using a multicountry data set. As we find for the Russia-Prussia border, differences in infrastructure can persist for a long time and translate into long-lasting differences in industrial production. The fact that local wages and unemployment change smoothly across partition borders is because, with no constraints on mobility across partition borders after reunification, differences in these and other characteristics directly affecting well-being would have created arbitrage opportunities for local population.

Overall, our results reveal that (1) Prussia's deep and extensive industrialization resulted in persistent advantage of the Prussian share of Poland in infrastructure and industrial output, (2) substantial administrative and political autonomy given to the Polish territories (Galicia) by the Habsburg empire resulted in persistent belief in democracy, (3) Russia's severe oppression of the Catholic Church led to persistent distrust of the church, resulting in lower religiosity in the Kingdom of Poland.

6.2. Channels

In the second step of our investigation of the channels of influence, we include economic and cultural variables that jump at a particular partition border as additional regressors in our baseline RD specification and compare the magnitude of the estimate of the jump for political outcomes with and without these controls. Table 5 presents results for the Russia-Prussia border. Recall that this border matters for the anti-communist vs. post-communist cleavage and for the support of the left party (SLD). In the table, for each political outcome we present estimates of the discontinuous jump at the border, first without potential channels (replicating results on the effect of the partition border) then with the potential channels included one by one and together. We find that inclusion of the infrastructure (i.e., railways within 15 kilometers) and the industrial production reduces the point estimates of the jumps in the vote for anti-communists (PO plus PiS) and post-communists (SLD plus PSL) and makes them statistically insignificant. Controlling for railroad availability alone reduces point estimates of these jumps by about 1 percentage point, or 30%, in the case of the vote for anti-communists and by 17% in the case of the vote for post-communists. In contrast, controlling for religiosity does not alter the border effect on the anti-communist vs. post-communist cleavage. This finding points to the

importance of infrastructure and economic development for support of anti-communist parties. The jump in the vote for the left (SLD) alone at the Russia-Prussia border is better explained by differences in religiosity on the two sides of the border; the point estimate of the jump is reduced by 1 percentage point, or 35% (see Panel A in Table A.3). This can be explained by the fact that less-religious people are more likely to give political support to the party whose agenda is the most culturally liberal, and to some extent even atheist, as reflected in the negative and significant coefficient on religiosity in regressions explaining the vote for the SLD.

Table 6 presents the results for the Russia-Austria border. First, let us consider how the potential channels, namely, religiosity and the attitude toward democracy, affect discontinuities in voting for the largest political parties. The vote for religious conservatives is strongly positively associated with religiosity (as reflected in the coefficient on the percentage of the population attending mass every week in regression for the vote for the PiS). Once we control for church attendance, the discontinuity in the vote for religious conservatives (PiS) at the Austria-Russia border essentially disappears: the magnitude of the point estimate of the jump in the vote for the PiS decreases by more than 80% and becomes insignificant. Similarly, religiosity explains the Austria-Russia border effect on turnout.

The vote for the liberal party (PO) is positively associated with the preference for democracy and negatively associated with religiosity. As we showed above, all three variables (the vote for the liberals, the preference for democracy, and religiosity) are discontinuously higher on the Austrian side of the Russia-Austria border. Thus, controlling for the preference for democracy reduces the magnitude of the jump in the vote for liberals (PO) at the border, while controlling for religiosity increases the magnitude of this jump. If there were no difference in religiosity between Austria and Russia, the legacy of the Austrian empire on the vote for the liberals would have been stronger. Accounting for the difference in the attitude toward democracy reduces the effect of the border on voting for the PO by 1 percentage point, or 13%.[15]

The magnitude of the jump in the vote for the peasant party (PSL) at the border between Russia and Austria is reduced by more than 1 percentage point by

[15] Note that the measure of the preference for democracy is an imperfect proxy for the liberal spirit of today's population of Galicia as a legacy of the Austrian empire. Thus, it is not surprising that this variable only partially explains the difference in the vote for the liberals on the two sides of the Austria-Russia border.

each of the two potential mechanisms. If we account for both of them, the jump is cut by almost 3 percentage points, or by one-third.

Now, let us consider political cleavages, which are the combinations of the effects on the individual parties, described above. The magnitude of the jumps in the vote for the anti-communist and post-communist parties is substantially reduced when differences in religiosity are taken into account. They are further reduced, though to a smaller extent, when we control for the preference for democracy. Once we control for both channels, the magnitude of the jump at the border in the vote for anti-communists drops by 5.7 percentage points, or 44% (but stays significant as we cannot explain fully the jump in the vote for the liberal PO party), whereas the jump in the vote for post-communists drops by 6.6 percentage points, or 61%, and becomes insignificant.

Controlling for religiosity and controlling for the preference for democracy have the opposite effects on the magnitude of the jump in the vote for cultural liberals (PO and SLD). This is similar to considering the vote for the PO alone. The vote for the left party (SLD) is strongly negatively associated with religiosity (for the SLD, this association is even stronger than for the PO).[16] As a result, the point estimate of the discontinuous jump in the vote for cultural liberals at the border increases almost twofold once we control for church attendance. It decreases by about 1 percentage point, or 16%, and becomes insignificant when we control for the attitude toward democracy (just as with the vote for the PO alone).

Thus, we find that the vastly different Austrian and Russian policies toward the Catholic Church explain why Galicia today votes more for religious conservatives, while the difference in policies of the two empires toward local democratic institutions and involvement of ethnic Poles in local governance helps to explain the stronger preference for liberals on the Austrian side.

Overall, we find that differences in infrastructure explain the most important political effects of the Russia-Prussia border, while cultural legacies of empires go a long way toward explaining the political effects of the Austria-Russia border.

[16] The jump at the border of the vote for the left (SLD) is actually negative (crossing the border into Austria) and statistically insignificant; but controlling for religiosity makes it positive and insignificant (see appendix, table A.3).

7. Conclusions

The partition of Poland by the three European superpowers of the eighteenth and nineteenth centuries continues to exert an influence on contemporary Poland, despite ending almost a century ago. Infrastructural and cultural legacies of the three empires persist and translate into differences in political outcomes. We document these effects by relying on regression discontinuity analysis.

Comparing the legacies of the Russian and Prussian empires, we show that the current population on the Prussian side strongly prefers post-Solidarity, anti-communist parties. This difference is largely explained by the persistent effect of an extensive railroad network built by Prussia at the time of the Industrial Revolution. This finding demonstrates that infrastructure may have a long-lasting effect not only on industrial production and economic development but also on political support for transition and, therefore, policies conducive to future development.

Discontinuities at the Russia-Austria border highlight the legacies of these two empires. The current population on the Austrian side of the border grants more political support to both liberals and religious conservatives. The reason for this is twofold. Habsburgs gave substantial autonomy to Galician Poles in religious practices and in local civil government, whereas the Russian Empire severely oppressed Catholic priests and outlawed participation by the local population in the governance of its Polish lands. The empires' contrasting policies toward the Catholic Church had persistent effects on religiosity across the Russia-Austria border and explain the gap in political support for religious conservatives. The difference in governance institutions of the two empires had a lasting effect on the belief in democracy on both sides of the border, which partly explains the stronger support for liberals on the Austrian side. This finding provides an illustration of how formal governance institutions and the experience of democracy can change local culture and, in particular, attitudes toward democracy, which in turn may have a persistent effect on political equilibrium, similar to the persistent effect of infrastructure.

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Figure 1.1. Partition borders after the Congress of Vienna, 1815

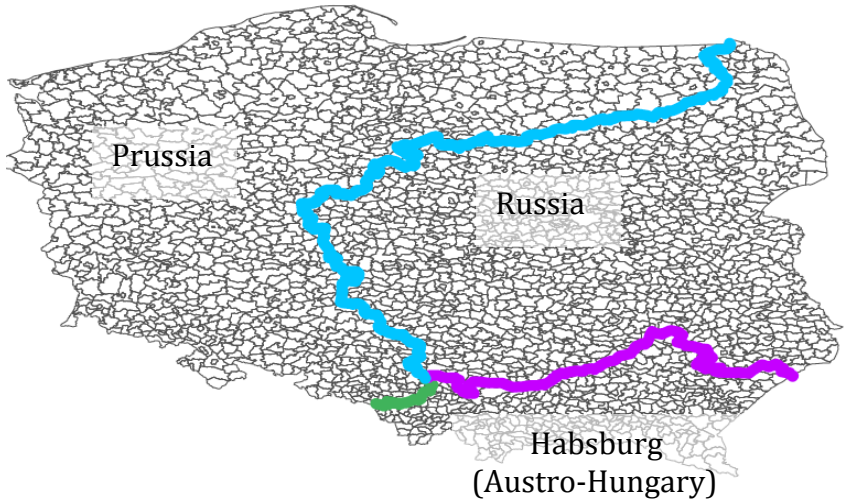


Figure 1.2. The Northern and Western territories

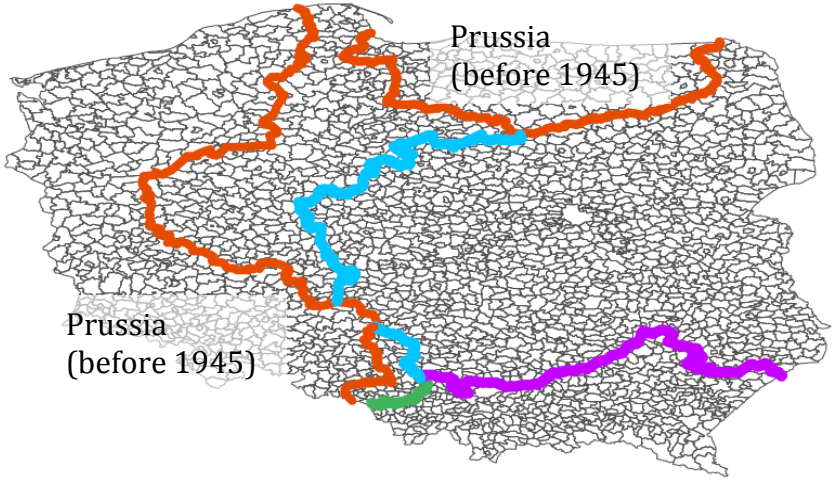
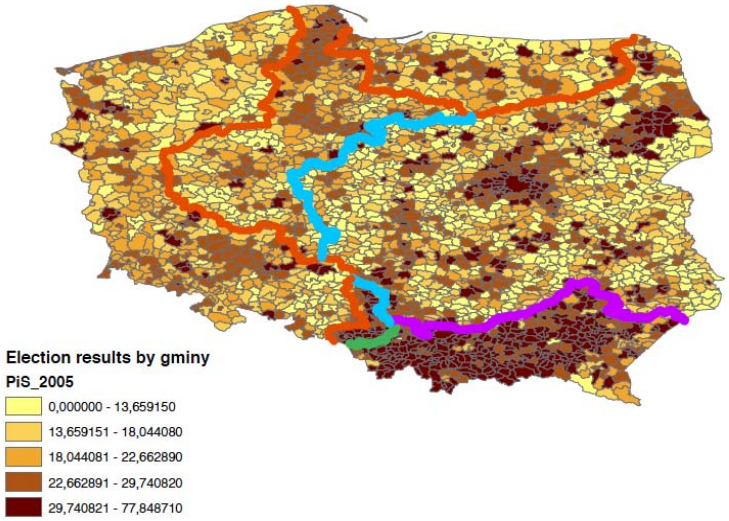
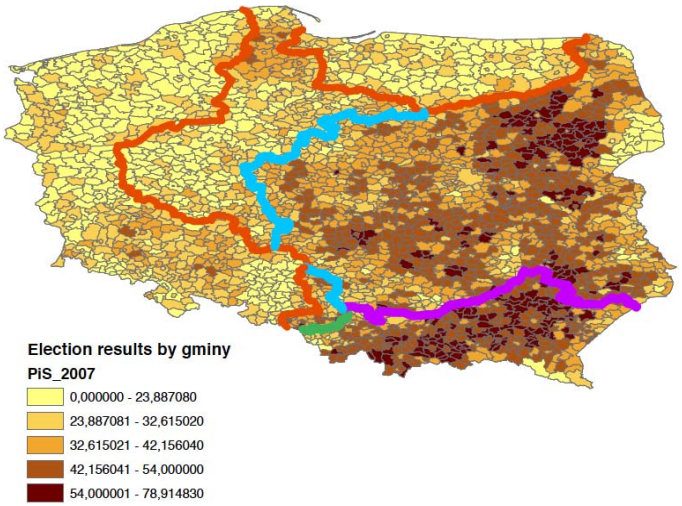


Figure 2. Voting for the two main parties and partitions

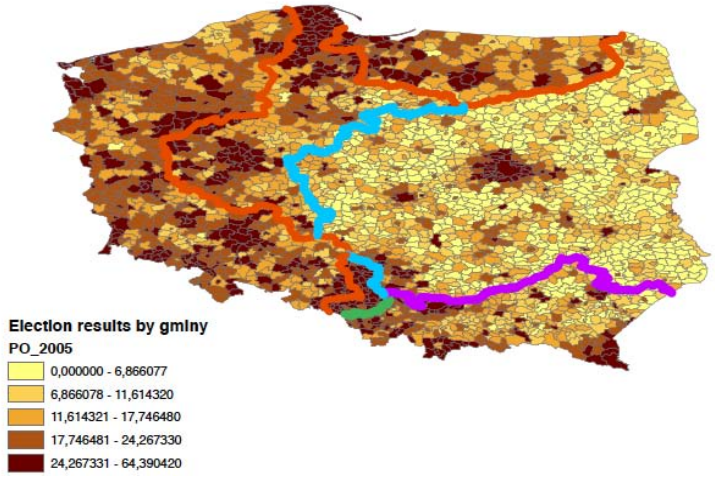
Vote for religious conservatives (PiS), 2005



Vote for religious conservatives (PiS), 2007



Vote for liberals (PO), 2005



Vote for liberals (PO), 2007

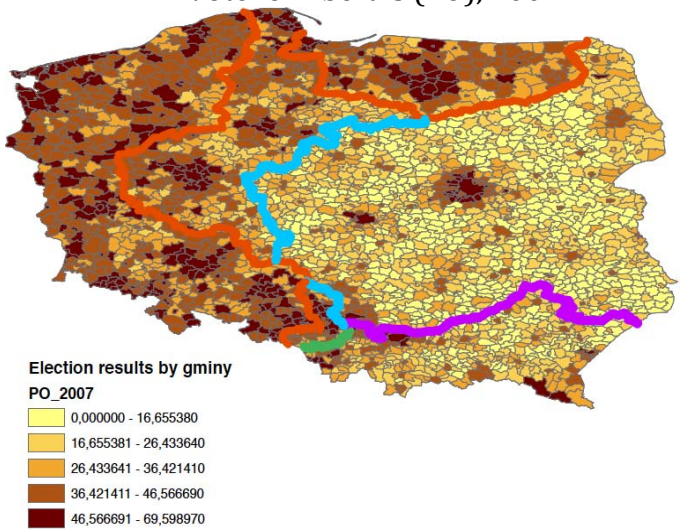


Figure 3. Bandwidth of 60 kilometers

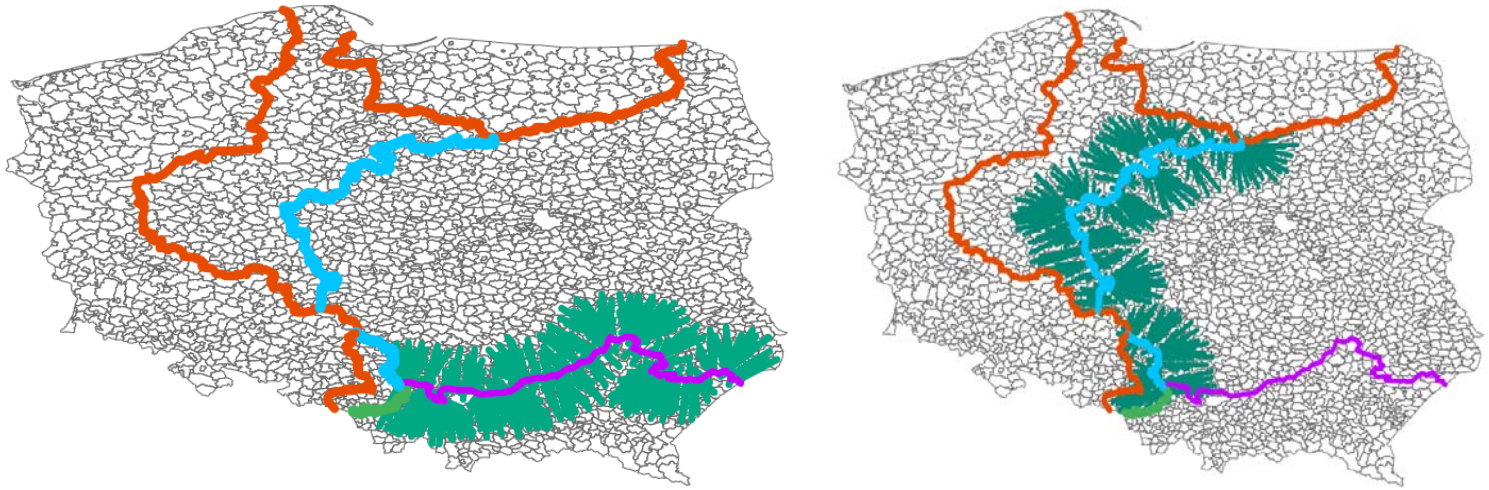


Figure 4. Voting results by distance bins around the Prussia-Russia border

Chart A

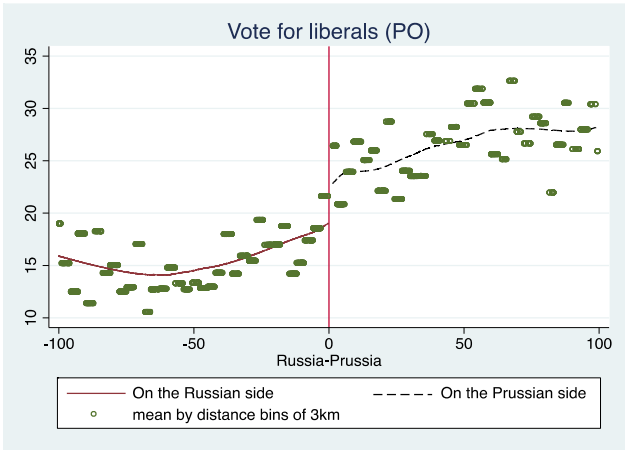


Chart B

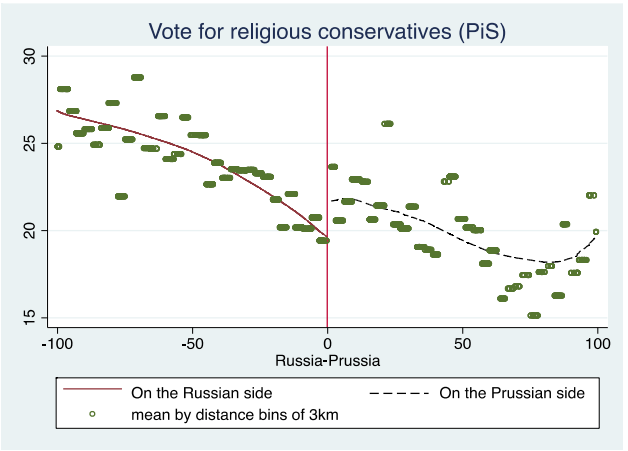


Chart C

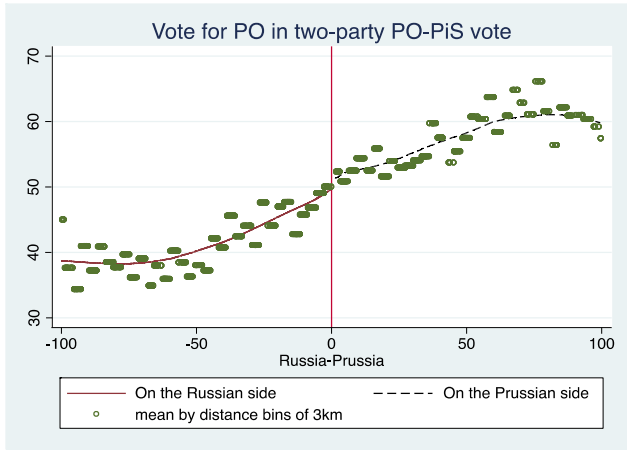


Chart D

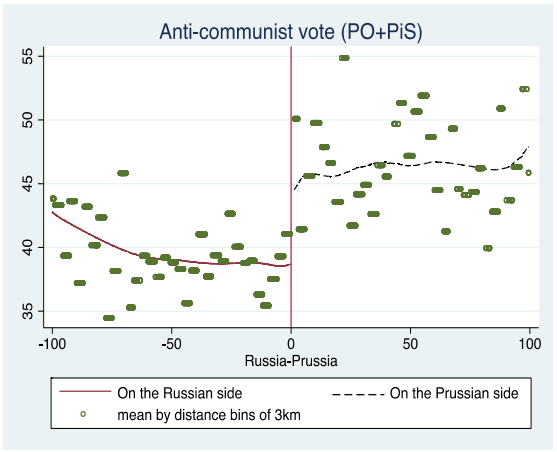


Chart E

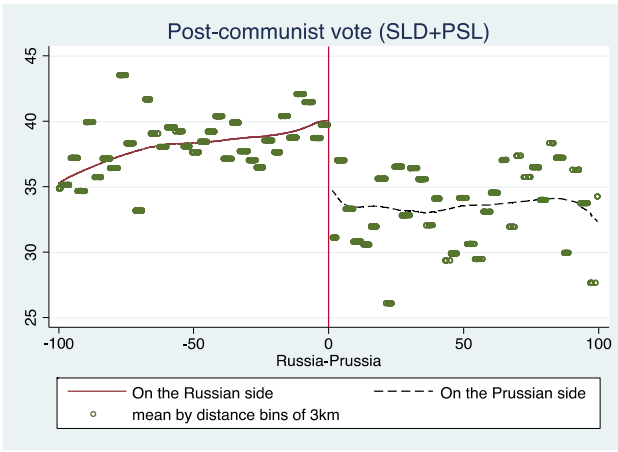


Chart F

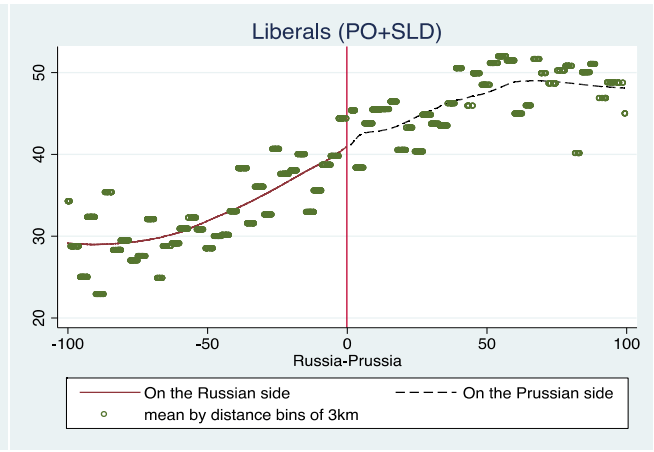


Figure 5. Voting results by distance bins around the Austria-Russia border

Chart A

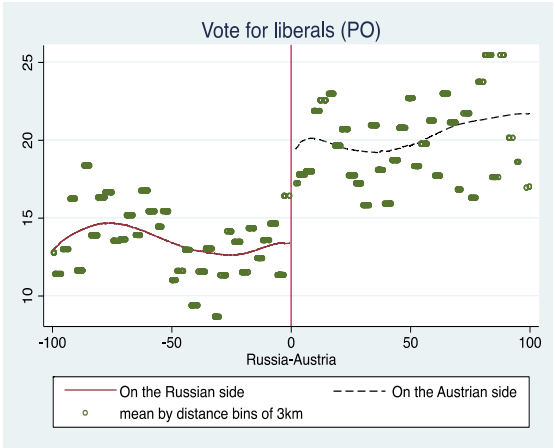


Chart B

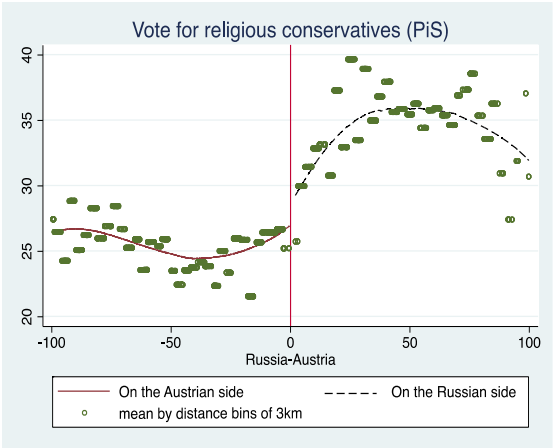


Chart C

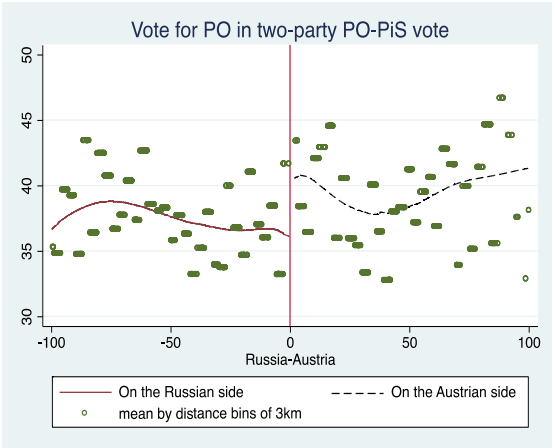


Chart D

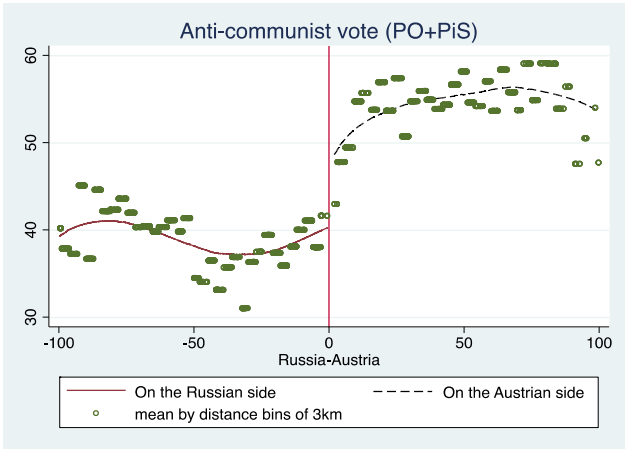


Chart E

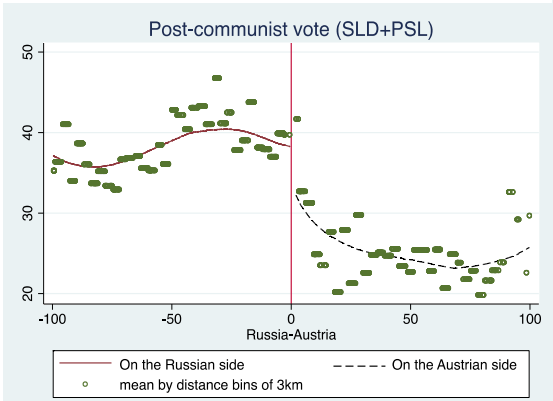


Chart F

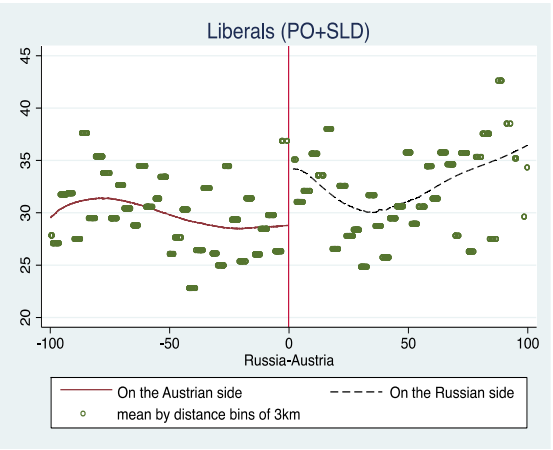
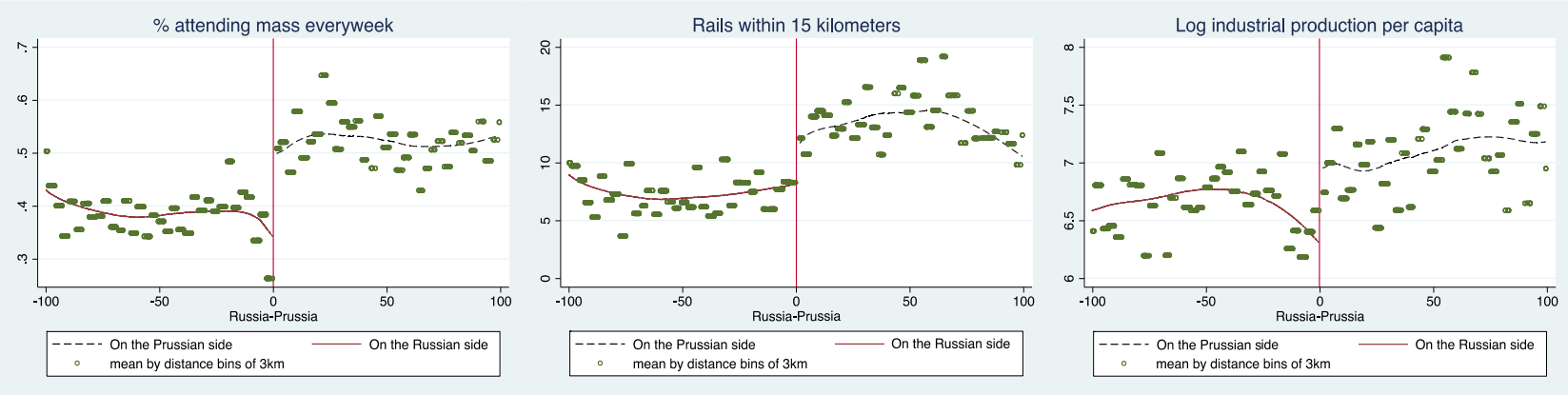


Figure 6. Cultural and economic roots of empire influence at empire borders (by distance bins)

Russia-Prussia border:



Russia-Austria border:

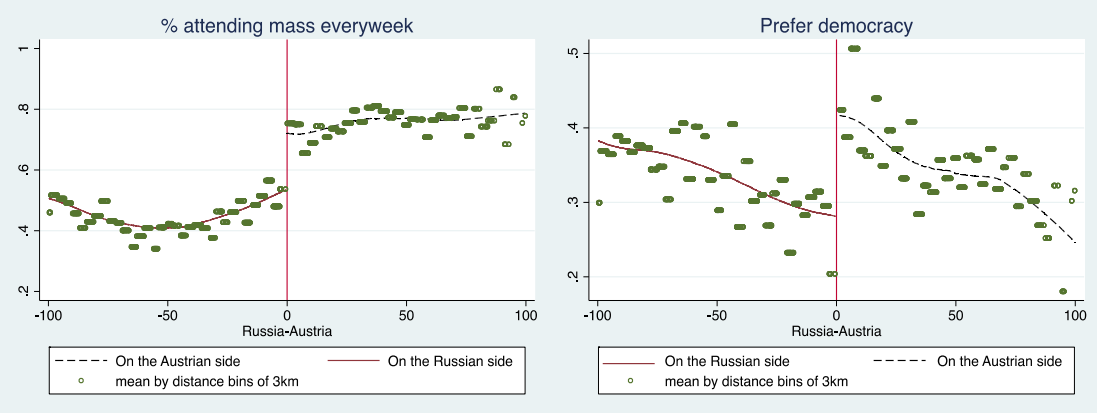


Table 1. Average differences in political outcomes across empires (OLS)

	Parliamentary elections (2001, 2005, 2007, 2011)									
	Liberals (PO)		Religious conservatives (PiS)		Left (SLD)		Peasants (PSL)		Turnout	
Austria (vs. Russia)	5.4	5.4	8.65	8.65	-3.64	-3.64	-7.76	-7.76	3.17	3.17
	[1.03]***	[1.03]***	[0.98]***	[0.98]***	[0.89]***	[0.89]***	[1.04]***	[1.04]***	[0.48]***	[0.48]***
Prussia (vs. Russia)	13.7	12.8	-7.07	-5.62	4.67	3.82	-9.89	-8.17	-1.23	1.47
	[0.67]***	[1.14]***	[0.55]***	[0.74]***	[0.62]***	[0.79]***	[0.73]***	[0.98]***	[0.40]***	[0.51]***
Western and Northern territories dummy		1.45		-2.35		1.38		-2.79		-4.38
		[1.12]		[0.67]***		[0.74]*		[0.86]***		[0.52]***
2005 election dummy	7.42	7.42	16.1	16.1	-24.3	-24.3	-2.94	-2.94	-6.82	-6.82
	[0.30]***	[0.30]***	[0.35]***	[0.35]***	[0.41]***	[0.41]***	[0.29]***	[0.29]***	[0.18]***	[0.18]***
2007 election dummy	21.1	21.1	29.7	29.7	-25.1	-25.1	0.33	0.33	2.88	2.88
	[0.56]***	[0.56]***	[0.62]***	[0.62]***	[0.40]***	[0.40]***	[0.31]	[0.31]	[0.27]***	[0.27]***
2011 election dummy	20.3	20.3	27.3	27.3	-28.3	-28.3	-0.2	-0.2	50	50
	[0.57]***	[0.57]***	[0.62]***	[0.62]***	[0.49]***	[0.49]***	[0.32]	[0.32]	[0.25]***	[0.25]***
Constant	2.47	2.47	7.63	7.63	35.1	35.1	21.6	21.6	43.6	43.6
	[0.46]***	[0.46]***	[0.45]***	[0.45]***	[0.70]***	[0.70]***	[0.64]***	[0.64]***	[0.28]***	[0.28]***
Observations	9,892	9,892	9,892	9,892	9,892	9,892	9,892	9,892	9,892	9,892
R-squared	0.575	0.576	0.675	0.677	0.674	0.675	0.187	0.193	0.941	0.945

Note: Controls include longitude, latitude, urban, large cities, and election dummies. Robust standard errors (in parentheses) are clustered at the county level.
* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 2. Estimates of the jumps in basic controls at partition borders: nonparametric local linear RD

	Latitude	Longitude	Large cities	Urban
Austria (vs. Russia)				
Local Wald Estimate	-0.021	0.0066	0.015	-0.028
	[0.093]	[0.56]	[0.022]	[0.074]
bandwidth	60	60	60	60
Observations	1,442	1,442	1,442	1,442
Prussia (vs. Russia)				
Local Wald Estimate	-0.29	0.086	0.018	0.069
	[0.42]	[0.28]	[0.042]	[0.098]
bandwidth	60	60	60	60
Observations	1,488	1,488	1,488	1,488

Table 3. Estimates of the jumps in voting at partition borders: parametric local linear RD

	Elections (2001, 2005, 2007, 2011)								
	Political parties					Political cleavages			
	Liberals (PO)	Religious conservatives (PiS)	Left (SLD)	Peasants (PSL)	Turnout	Anti-communist (PO+PiS)	Post-communist (SLD+PSL)	Cultural Liberals (PO+SLD)	Cultural Conservatives (PiS+PSL)
Prussia (vs. Russia)	2.806	1.294	-3.206	-1.042	0.327	4.100	-4.248	-0.399	0.252
	[1.755]	[1.118]	[1.686]*	[2.107]	[0.733]	[2.057]**	[2.266]*	[2.513]	[2.198]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border x Prussia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bandwidth	60	60	60	60	60	60	60	60	60
Observations	2,084	2,084	2,084	2,084	2,084	2,084	2,084	2,084	2,084
R-squared	0.689	0.731	0.786	0.343	0.962	0.850	0.677	0.56	0.643
Austria (vs. Russia)	7.058	5.858	-2.2	-8.713	1.821	12.92	-10.91	4.858	-2.855
	[1.733]***	[1.954]***	[1.758]	[3.082]***	[1.041]*	[2.369]***	[2.894]***	[2.906]*	[2.868]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border x Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bandwidth	60	60	60	60	60	60	60	60	60
Observations	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904
R-squared	0.548	0.743	0.68	0.31	0.955	0.832	0.614	0.492	0.645

Note: Controls include longitude, latitude, urban, large cities, and election dummies. Robust standard errors (in parentheses) are clustered at the county level.
* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 4. Estimates of the jump in potential channels at partition borders: parametric local linear RD

	Religiosity	Economic development				Education	Values				
	Attending mass every week	Industrial production per capita	Rails within 15km	Unemployment	Wages as percent of country average	At least secondary education	Positive attitude towards democracy	Trust in government	Generalized trust	Negative attitude towards violating the law	Negative attitude towards foreigners
Prussia (vs. Russia)	0.128	0.866	4.355	-0.0264	-1.087	-1.54	-0.084	0.00048	-0.0028	0.0027	-0.074
	[0.0482***	[0.505]*	[1.957]**	[0.0847]	[3.673]	[1.140]	[0.0639]	[0.0505]	[0.026]	[0.542]	[0.062]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border*Prussia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bandwidth	60	60	60	60	60	60	60	60	60	60	60
Observations	521	521	521	521	515	521	521	521	521	521	521
R-squared	0.4	0.213	0.257	0.523	0.168	0.588	0.063	0.037	0.167	0.256	0.259
Austria (vs. Russia)	0.19	0.687	-0.832	0.0117	-2.391	-0.376	0.147	0.0291	0.0326	0.197	-0.0647
	[0.052]***	[0.784]	[1.801]	[0.0781]	[2.714]	[1.302]	[0.0614]**	[0.0407]	[0.0236]	[0.466]	[0.0464]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border*Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bandwidth	60	60	60	60	60	60	60	60	60	60	60
Observations	476	476	476	476	464	476	476	476	476	476	476
R-squared	0.707	0.157	0.208	0.274	0.273	0.573	0.105	0.093	0.103	0.188	0.111

Note: Controls include longitude, latitude, urban, large cities, and election dummies. Robust standard errors (in parentheses) are clustered at the county level.
* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 5. The effect of potential channels of empire influence on voting behavior at the border between Russia and Prussia: parametric local linear RD

	Vote for anti-communists (PO+PiS)					Vote for post-communists (SLD+PSL)				
Prussia (vs. Russia)	4.1	2.873	3.421	4.419	2.19	-4.248	-3.522	-3.662	-4.163	-2.575
	[2.05]**	[1.923]	[2.189]	[2.12]**	[2.100]	[2.266]*	[2.222]	[2.349]	[2.325]*	[2.351]
Rails within 15 km		0.279			0.266		-0.165			-0.159
		[0.089]***			[0.082]***		[0.0797]**			[0.079]**
Log industrial production pc			0.777		0.56			-0.67		-0.571
			[0.467]*		[0.409]			[0.378]*		[0.352]
% attending mass every week				-2.509	1.96				-0.671	-3.719
				[5.770]	[5.036]				[5.583]	[5.387]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border * Prussia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,084	2,084	2,084	2,084	2,084	2,084	2,084	2,084	2,084	2,084
R-squared	0.85	0.856	0.852	0.85	0.857	0.677	0.681	0.679	0.677	0.683

Note: Controls include: longitude, latitude, urban, large cities, and election dummies. Robust standard errors (in parentheses) are clustered at county level.
* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 6. The effect of potential channels of empire influence on voting behavior at the border between Russia and Austria: parametric local linear RD

	Vote for religious conservatives (PIS)				Vote for liberals (PO)			
Austria (vs. Russia)	5.858	1.076	5.604	-0.0202	7.058	8.283	6.147	7.233
	[1.954]***	[1.765]	[2.003]***	[1.925]	[1.733]***	[1.672]***	[1.777]***	[1.804]***
% attending mass every week		25.07		26.45		-6.426		-5.109
		[3.760]***		[3.691]***		[3.735]*		[3.624]
Positive attitude towards democracy			1.728	5.686			6.21	5.446
			[4.413]	[3.026]*			[3.163]*	[3.209]*
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border * Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	60	60	60	60	60	60	60	60
Observations	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904
R-squared	0.743	0.763	0.743	0.765	0.548	0.551	0.553	0.555
	Vote for anti-communists (PO+PiS)				Vote for post-communists (SLD+PSL)			
Austria (vs. Russia)	12.92	9.36	11.75	7.213	-10.91	-6.567	-9.729	-4.272
	[2.369]***	[2.583]***	[2.288]***	[2.842]**	[2.894]***	[3.178]**	[2.853]***	[3.531]
% attending mass every week		18.65		21.34		-22.79		-25.67
		[5.544]***		[5.255]***		[6.110]***		[6.003]***
Positive attitude towards democracy			7.938	11.13			-8.066	-11.91
			[5.104]	[4.731]**			[6.314]	[5.644]**
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border * Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	60	60	60	60	60	60	60	60
Observations	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904
R-squared	0.832	0.838	0.834	0.842	0.614	0.634	0.618	0.642
	Vote for cultural liberals (PO+SLD)				Turnout			
Austria (vs. Russia)	4.858	9.212	4.084	8.84	1.821	1.127	1.881	1.1
	[2.906]*	[2.386]***	[3.035]	[2.472]***	[1.041]*	[1.268]	[0.923]**	[1.139]
% attending mass every week		-22.84		-22.37		3.641		3.675
		[6.061]***		[6.288]***		[3.127]		[3.013]
Positive attitude towards democracy			5.275	1.929			-0.411	0.139
			[5.213]	[5.027]			[2.375]	[2.082]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border * Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	60	60	60	60	60	60	60	60
Observations	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904
R-squared	0.492	0.518	0.494	0.519	0.955	0.955	0.955	0.955

Note: Controls include: longitude, latitude, urban, large cities, and election dummies. Robust standard errors (in parentheses) are clustered at the county level.
* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Appendix.

Figure A.1. Nolan charts of political space for Poland: Projection to the liberalism and the attitude towards communism axes

Chart A. Ideological dimensions

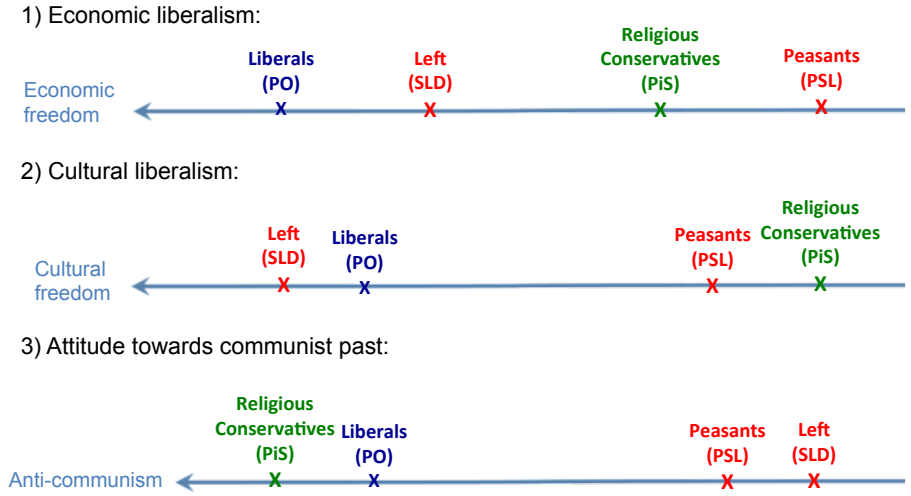
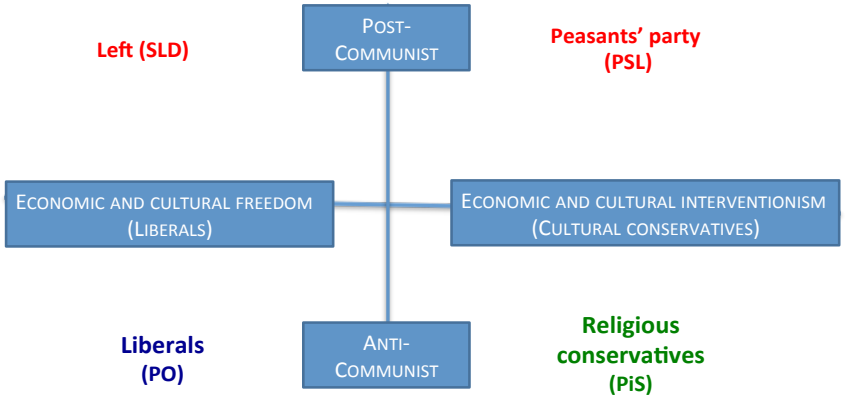


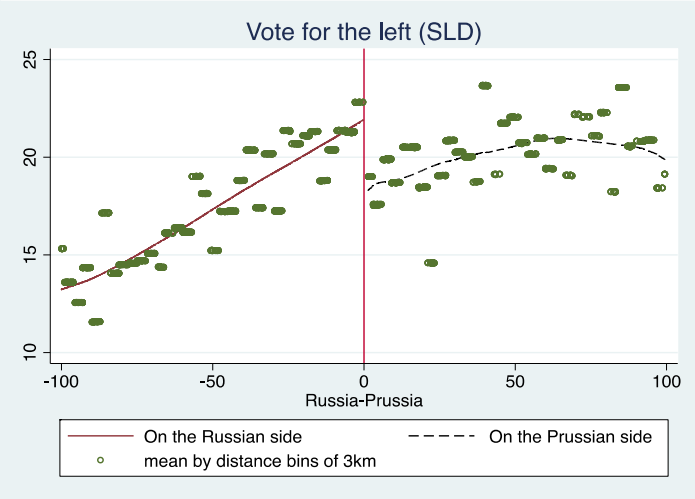
Chart B. Main political cleavages



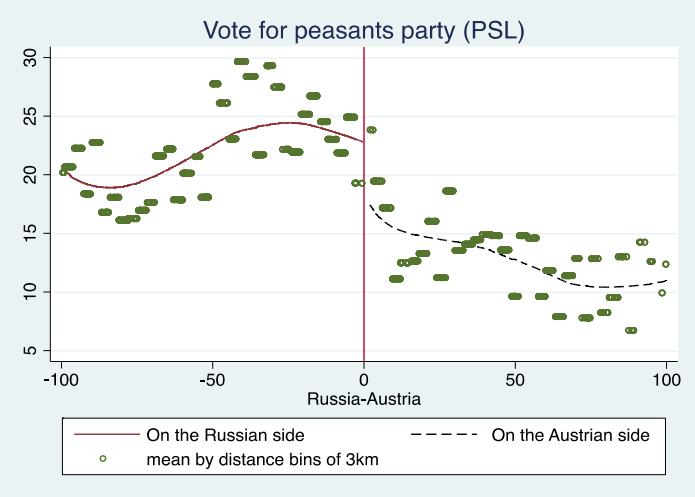
Note: The units of the three axes are different. The distances between the political parties on the economic liberalism axis are much smaller than on culture.

Figure A.2.

Russia-Prussia border



Russia-Austria border



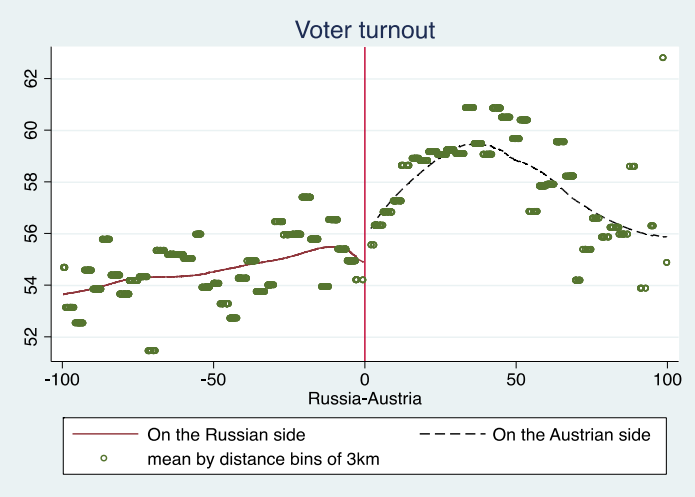


Figure A.3. No jumps at the empire borders by distance bins

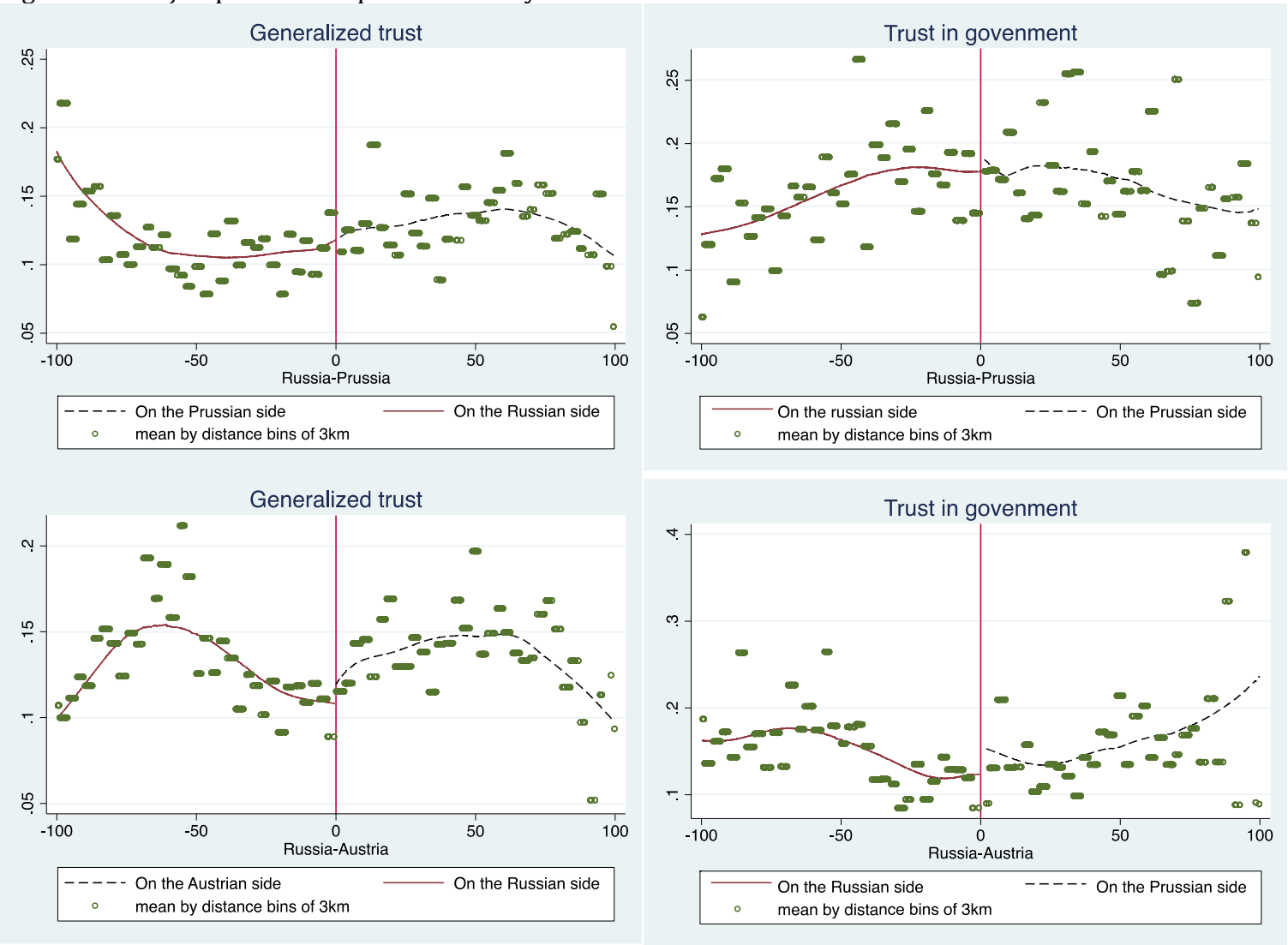


Figure A.4. McCrary density tests

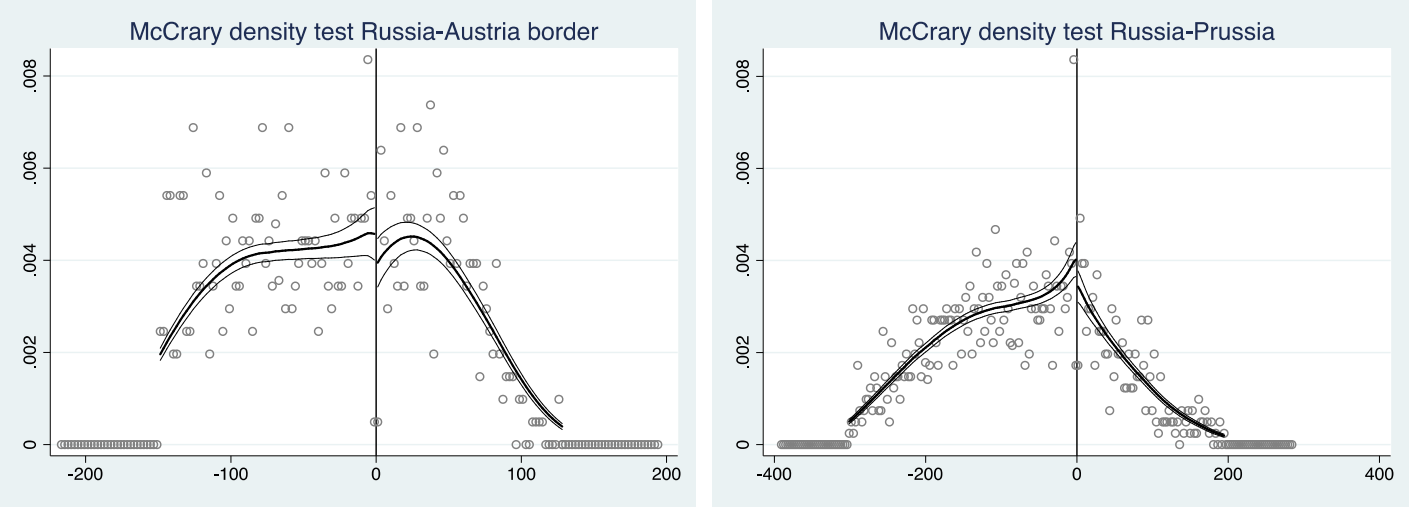


Table A.1. Percentage of votes (and the number of seats) obtained by the main political parties in each of the four elections between 2001 and 2011

	Religious conservatives (PiS)	Liberals (PO)	Peasants' party (PSL)	Left (SLD)	Total for all other parties
2001	9.50 (44)	12.68 (65)	8.98 (42)	41.04 (216)	27.80 (93)
2005	26.99 (155)	24.14 (133)	6.96 (25)	11.31 (55)	30.60 (92)
2007	32.11 (166)	41.51 (209)	8.91 (31)	13.15 (53)	4.32 (1)
2011	29.89 (157)	39.18 (207)	8.36 (28)	8.24 (27)	14.33 (41)

Note: There are 460 seats in the Polish Parliament (*Sejm*).

Table A. 2. Summary statistics by subsamples

Sample:	Poland ouside Western and Northern territories				Within 60 km to the Russia-Prussia border		Within 60 km to the Russia-Austria border	
	Russia	Prussia	Austria	Total	Russia	Prussia	Russia	Austria
Political outcomes								
Liberals (PO) vote share	14.49	27.45	20.09	18.29	16.03	25.43	12.83	19.58
	(10.76)	(14.51)	(11.87)	(12.95)	(10.75)	(14.39)	(10.57)	(11.82)
Religious conservatives (PiS) vote share	25.87	20.26	34.53	26.30	22.66	21.04	24.81	34.67
	(16.68)	(11.01)	(18.96)	(16.75)	(14.10)	(11.47)	(16.94)	(19.03)
Left (SLD) vote share	15.68	19.52	12.06	15.82	19.32	19.77	16.00	11.53
	(13.57)	(14.18)	(11.36)	(13.53)	(14.49)	(14.22)	(14.12)	(10.79)
Peasants' party (PSL) vote share	21.09	12.76	13.17	17.84	19.61	13.35	24.03	14.21
	(11.84)	(9.16)	(10.20)	(11.72)	(10.49)	(9.96)	(13.33)	(10.98)
Turnout	55.14	56.61	58.31	56.05	53.83	56.23	54.97	58.90
	(23.27)	(22.11)	(21.44)	(22.72)	(23.51)	(22.55)	(23.38)	(21.04)
Basic controls								
Latitude	51.83	52.54	49.88	51.62	51.91	52.03	50.68	49.99
	(0.90)	(1.26)	(0.29)	(1.27)	(0.90)	(1.18)	(0.29)	(0.25)
Longitude	20.99	17.93	20.99	20.34	19.21	18.30	21.48	20.89
	(1.57)	(0.91)	(1.22)	(1.87)	(0.76)	(0.78)	(1.38)	(1.27)
Large city dummy	0.01	0.03	0.01	0.01	0.01	0.04	0.00	0.02
	(0.09)	(0.17)	(0.11)	(0.11)	(0.12)	(0.20)	(0.07)	(0.13)
Urban municipality	0.28	0.33	0.29	0.29	0.33	0.40	0.30	0.33
	(0.45)	(0.47)	(0.45)	(0.46)	(0.47)	(0.49)	(0.46)	(0.47)
Economic channels								
Industrial production per capita	6.02	7.00	6.71	6.36	6.37	6.95	6.15	6.88
	(1.88)	(1.02)	(1.19)	(1.67)	(1.57)	(1.14)	(1.93)	(1.13)
Rails within 15 km	6.71	12.74	5.47	7.76	7.23	13.61	7.92	5.95
	(5.94)	(6.67)	(4.14)	(6.38)	(6.01)	(6.99)	(6.02)	(4.39)
Unemployment (log)	2.40	2.30	2.32	2.36	2.51	2.28	2.38	2.26
	(0.44)	(0.55)	(0.43)	(0.46)	(0.39)	(0.56)	(0.35)	(0.41)
Wages (% of country average)	82.33	81.05	80.82	81.78	80.43	80.48	81.07	81.48
	(11.30)	(9.06)	(6.94)	(10.18)	(10.84)	(10.15)	(7.93)	(7.23)
Education channel								
Secondary education (at least)	23.83	23.66	25.40	24.09	23.17	24.61	25.22	25.30
	(9.01)	(7.75)	(8.30)	(8.65)	(8.07)	(7.93)	(8.22)	(8.46)
Cultural channels								
Church attendance	0.43	0.54	0.76	0.51	0.39	0.53	0.45	0.75
	(0.12)	(0.13)	(0.12)	(0.17)	(0.11)	(0.14)	(0.13)	(0.11)
Share of population who prefer democracy	0.35	0.36	0.35	0.35	0.39	0.53	0.31	0.36
	(0.17)	(0.14)	(0.12)	(0.16)	(0.16)	(0.14)	(0.15)	(0.12)
Share of population who trusts the government	0.15	0.16	0.16	0.16	0.18	0.18	0.14	0.15
	(0.12)	(0.12)	(0.14)	(0.12)	(0.14)	(0.12)	(0.10)	(0.09)
Share of population who trusts others	0.13	0.13	0.14	0.13	0.11	0.13	0.13	0.14
	(0.07)	(0.09)	(0.06)	(0.07)	(0.06)	(0.08)	(0.05)	(0.06)
Negative attitude towards violating the law	13.84	13.73	14.16	13.87	13.60	13.68	14.10	14.16
	(1.18)	(1.48)	(1.11)	(1.24)	(1.26)	(1.65)	(0.95)	(1.08)
Negative attitude towards foreigners	0.46	0.32	0.43	0.42	0.46	0.32	0.46	0.44
	(0.15)	(0.15)	(0.12)	(0.16)	(0.14)	(0.17)	(0.10)	(0.10)
Number of municipalities in each sub-sample	1101	389	343	1833	295	226	228	248

Table A.3. Additional results on potential channels of empire influence

Panel A. Prussia-Russia border

	Vote for the left (SLD)				
Prussia (vs. Russia)	-3.206	-3.848	-3.506	-2.079	-2.92
	[1.686]*	[1.621]**	[1.737]**	[1.497]	[1.477]*
Rails within 15 km		0.146			0.11
		[0.0598]**			[0.0582]*
Log industrial production pc			0.343		0.159
			[0.304]		[0.292]
% attending mass every week				-8.865	-7.138
				[4.092]**	[3.933]*
Controls	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border * Prussia	Yes	Yes	Yes	Yes	Yes
Observations	2,084	2,084	2,084	2,084	2,084
R-squared	0.786	0.79	0.787	0.791	0.794

Panel B. Austria-Russia border

	Vote for the left (SLD)				Vote for peasant party (PSL)			
Austria (vs. Russia)	-2.2	0.929	-2.063	1.607	-8.713	-7.496	-7.666	-5.879
	[1.758]	[1.674]	[1.882]	[1.821]	[3.082]***	[3.155]**	[2.922]**	[3.227]*
% attending mass every week		-16.41		-17.26		-6.378		-8.407
		[3.987]***		[4.273]***		[6.527]		[6.499]
Positive attitude toward democracy			-0.935	-3.517			-7.131	-8.389
			[3.690]	[3.723]			[4.910]	[4.835]*
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distance to border; Distance to border * Austria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	60	60	60	60	60	60	60	60
Observations	1,904	1,904	1,904	1,904	1,904	1,904	1,904	1,904
R-squared	0.68	0.698	0.68	0.699	0.31	0.312	0.315	0.32