Coexistence, Polarization, and Development: The Armenian Legacy in Modern Turkey

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Abstract

This paper investigates the effect of coexistence of different religious groups. Using a unique data set at both the district and the village level, I estimate the impact of the former Armenian presence in Turkey. Using walking distance to Mt. Ararat, which was the geographical center of the ancient Armenian kingdoms, as an instrument for the spatial distribution of Armenians in 1914, I find that the current residents of districts with a greater historical Armenian presence are more religious, less educated, and poorer. I propose a mechanism and test for it: the presence of a rival religious group in close proximity increased the identification of Muslims with their in-group identity, Islam, and pious Muslims demanded education less after the secularization of education in the 1920s. Consistent with this mechanism, I find that the current residents of Muslim villages that are closer to former Armenian villages support Islamist parties more, and that the historical Armenian presence has a negative impact on education only for the cohorts that are affected by the secularization reform. Taken together, the results show that coexistence of different religious groups can have a long-term impact through its effect on culture and its interaction with formal institutions. When faced with a trade-off between transmitting their religious cultural traits to their offspring and educating them within the secular education system, Muslims who became more attached to their religion as a result of their coexistence with a rival non-Muslim group opted out of secular education.

JEL Classification Codes: O10, O43, P48, N40, Z12
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1 INTRODUCTION

As a social identity, religion strongly affects an individual's self-concept, self-evaluation, beliefs, and values (Turner et al., 1987; Brewer and Garnder, 1996). At the societal level, religious groups influence the political trajectory in many countries, and religion affects how people interact with institutions. Economists have long been interested in the impact of religious heterogeneity on economic performance.[1] However, the economic literature has emphasized the heterogeneity across different religious groups; heterogeneity across members within a religious group has largely been neglected. An understudied question is how coexistence of different religious groups affects the behavior of the religious group members and whether it increases the salience of religion as a social identity. In this paper, I investigate the impact of the historical presence of an ethnoreligious minority group, Armenians, on the behavior of the majority group members, Muslims, in Turkey.

Turkey provides a unique opportunity to study the impact of historical coexistence of diverse religious groups on long-term development. The Ottoman Empire had deliberately established institutions to maintain the diversity of the people it conquered and incorporated. Religion set the boundaries of communities and defined group identity. Non-Muslim minorities governed their civic affairs and schools, but endured certain legal restrictions and second-class citizenship. The rise of nationalism in the nineteenth-century contributed to the disintegration of the empire, and the transition from a religiously plural multiethnic empire to a nation-state after the First World War (WWI) brought about drastic changes to the population structure of Turkey. Solely on the basis of their religious affiliation, almost all members of the Greek and Armenian communities were forced to leave Turkey through the deportation of Armenians in 1915—16 and the population exchange between Greece and Turkey in 1923—25. Greeks and Armenians constituted, respectively, 9.7 percent and 7.2 percent of the population in 1914; after their departure Muslims made up 97.4 percent of Turkey's population (99.1 percent excluding Istanbul) in 1927.

Does the coexistence of different ethnic and religious groups lead to polarization and make in-group identities more salient? The impact of coexistence is *a priori* ambiguous. Social identity theory (Tajfel and Turner, 1979) posits that identification with a group motivates individuals to distinguish the in-group from the out-group using dimensions through which the in-group acquires a positive distinctiveness. It emphasizes that when the perceived ability to move from one group to another group is limited and the perceived legitimacy of the status differences between groups is questioned, group members tend to make more intergroup comparisons, and group identity becomes more

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[1]See for example Alesina et al. (2003), Montalvo and Reynal-Querol (2003), and Alesina and Zhuravskaya (2011).

salient. On the contrary, intergroup contact theory (Allport, 1954) points out that repeated and multiple social interactions under certain conditions, such as equal group status and intergroup cooperation, promote a culture of tolerance.

This paper focuses on the case of Armenians, analyzing the impact of the historical presence of Armenians on long-term socioeconomic and political development in Turkey. First, this study explores whether the historical presence of Armenians increases religiosity today, i.e., whether it strengthens the identification of the local Muslim population with their religion. I consider two sets of religiosity measures: support for Islamist parties and intensity of performing religious activities. Second, it investigates how the historical presence of Armenians affects local development, in particular educational attainment. I focus on human capital investment levels because the historical presence of Armenians might affect education through its impact on Muslims' occupational choices and on their religiosity. After the deportation of Armenians, Muslims had incentives to invest in human capital and take up occupations in industry and commerce, which were historically dominated by Armenians at the local level. However, the secularization of education in the 1920s introduced a trade-off between economic gains from education and intergenerational transmission of religious traits for pious Muslims. This paper exploits an extensive and novel dataset that combines historical population data with contemporary socioeconomic and political data, at both the district level (second-level administrative subdivision) and the village level.

The identification strategy at the district level exploits the cross-sectional variation in the spatial distribution of Armenians in 1914 within Turkey. Assessing the impact of the historical presence of Armenians with OLS would yield biased estimates, if Armenians self-selected into localities depending on unobservable factors that are correlated with outcomes. To address endogeneity concerns, I employ an instrumental variables (IV) strategy and instrument the Armenian share in 1914 with walking distance to Mt. Ararat, the geographical center of the ancient Armenian kingdoms. The idea behind using walking distance to Mt. Ararat as an instrumental variable is to predict where Armenians settled once they had migrated from their ancestral homeland, conditional on the cost of traveling. To capture the cost of traveling in ancient times, I neglect both modern and past road networks and assume that travel cost depends solely on topography.

I find that the residents of localities with a higher Armenian share in 1914 support Islamist parties more than the residents of other localities do. They are more likely to perform religious activities such as praying and fasting. I also find that the residents of districts with a greater historical presence of Armenians are less literate, less likely to complete primary school, and poorer today compared to residents of other districts. However, I do not find any long-term effect of the historical Armenian presence on the

share of population with a profession in industry and commerce, or on entrepreneurship levels. I provide evidence that the results are robust to a wide range of specifications and are unlikely to be driven by other possible historical and political determinants such as military occupations during and after WWI and Kurdish conflict.

I put forward the following mechanism to explain the results: the coexistence of Armenians and Muslims in close proximity led to polarization, and the presence of a rival religious group increased the identification of Muslims with their in-group identity, Islam, since religion was the main dimension that set the boundaries of communal life in the Ottoman Empire. After the secularization of education in the 1920s, religious Muslims faced a trade-off between transmitting their religious cultural traits to their children and educating them within the secular education system. They forwent economic gains from education and opted out of the secular education system, consistent with a model of intergenerational cultural transmission, in which parents socialize and transmit their preferences to their offspring, motivated by imperfect empathy, which biases parents toward their own cultural traits (Bisin and Verdier, 2000, 2001).

First, to provide empirical evidence consistent with this mechanism, I employ a flexible parametric estimation strategy at the village level and compare the voting behavior of the residents of the Muslim villages within a 25-kilometer radius of former Armenian villages. I find that the current residents of the Muslim villages within six kilometers of former Armenian villages support Islamist parties by 10 percent to 12 percent more compared to the residents of other the Muslim villages within 25 kilometers of former Armenian villages. Consistent with the polarization mechanism, the impact is larger for the Muslim villages that are closer to former Armenian villages.

Then, I investigate the role of conflict in explaining the greater identification of Muslims with their in-group identity, Islam. Given that there was no variation in the persecution of Armenians across regions, I focus on the case of Greeks at the village level.[2] Greeks played a similar role in the Ottoman economy and were subject to same institutions as Armenians. Unlike Armenians, all of whom were deported, the degree of conflict between Greeks and Muslims and persecution of Greeks varied across regions. As with Armenians, I find that the current residents of the Muslim villages within two kilometers of former Greek villages vote more for Islamist parties compared to the

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[2]At the district level, I disregard the case of Greeks and focus only on Armenians because for two reasons it is difficult to identify the impact of the historical presence of Armenians. First, Turkey and Greece decided to exchange the Orthodox Greek population in Turkey with the Muslim population in Greece after the Greco-Turkish War of 1919—1922. The Turkish government settled Muslim migrants into former Greek localities. Regrettably, information on the number of immigrants is not available at the district level, and it is impossible to disentangle the impact of the historical presence of Greeks from the impact of inflow of Muslim migrants. Second, most of the Greeks in Turkey lived in coastal areas. It is hard to find an exogenous source of variation in the spatial distribution of Greeks that would enable me to isolate the impact of the historical presence of Greeks from the impact of historical maritime trade.

residents of other the Muslim villages within a 25-kilometer radius of former Greek villages. Moreover, I find that this impact is driven mostly by the historical presence of Greeks in the Pontus region, where the degree of the Greek persecution was substantially greater than it was in other regions. Taken together, the results for religiosity are consistent with the rejection-identification model of Branscombe, Schmitt and Harvey (1999), which posits that an out-group threat strengthens identification with the in-group identity; the perceived treat posed by Christians increased the identification of Muslims with their religion.

Next, I investigate the evolution of literacy rates at the district level from 1927 to 1945. The Turkish government closed Qur'an schools in 1924 and gradually phased out religious instruction from the primary school curriculum over the 1920s. Moreover, in 1928, the government replaced the Arabic script, hitherto in use in Turkey, with the Latin alphabet. After these reforms, formal education no longer meant learning how to read and recite Qur'an in Arabic. I exploit the fact that literacy meant literacy in the Arabic script in 1927 and literacy in the Latin alphabet in 1945 to differentiate the educational attainment under the nonsecular and secular education systems. I find that the literacy gap between districts with higher and lower Armenian shares in 1914 emerged after the secularization of education.

Moreover, using a 5 percent micro sample of the 1985 and 1990 censuses, I show that, conditional on the supply of schools in 1927, the historical presence of Armenians has a negative impact on educational outcomes for the cohorts that are affected by the secularization reform, whereas it has no impact on unaffected cohorts. I show that, similarly, religiosity is negatively associated with education only for the cohorts that are affected by the secularization of education. I also provide suggestive evidence that the negative impact on education gets smaller after the introduction of religious vocational schools. The results suggest that the historical presence of Armenians affects education through its impact on religiosity. Muslims who lived in close proximity to Armenians developed a deeper attachment to their in-group identity, Islam, and demanded education less after the secularization of education in the 1920s.

Lastly, I consider alternative mechanisms. The deportation of Armenians might affect education and poverty through its persistent impact on the size of the local population. A persistent drop in population might divert public and private investments toward other regions where they would be more cost-efficient. I find that the shock caused by the deportation of Armenians on local population size dissipates over time, and that the deportation of Armenians has no long-term impact on population growth. A larger inflow of deprived war refugees and migrants into former Armenian localities might partly explain the catch-up in terms of population growth between districts with higher and lower Armenian shares in 1914. But, it might also account for the

emergence of the literacy gap in 1945. I show that migration to Armenian localities is too small in size to explain the emergence of the observed literacy gap in 1945 across districts. Furthermore, the deportation of Armenians might have affect socioeconomic development through its persistent impact on local inequality, if the wartime government did not equally distribute the abandoned Armenian wealth to the migrants who replaced them, or if the local elite captured it. I find that the historical presence of Armenians has no long-term impact on land inequality.

This paper contributes to the literature on the impact of coexistence and cross-cultural interaction of different groups. Grosfeld, Rodnyansky and Zhuravskaya (2013) investigate the impact of cross-cultural encounters between Jews and Gentiles in the Russian Empire and were the first to document polarization as a consequence of coexistence of rival groups. They find that anti-Semitism generated persistent antimarket culture. While Grosfeld, Rodnyansky and Zhuravskaya (2013) show that the presence of a rival group increases within-group cohesion and affects the group identity through self-identification of group members with respect to the distinctive features of the rival group, I show that presence of a rival group increases identification of group members with the social identity that distinguishes the in-group from the rival out-group. DellaVigna et al. (2014) find that the exposure of Croats to nationalistic Serbian radio broadcasts intended for Serbians triggers ethnic hatred toward Serbs in Croatia. In a different setting, Dippel (forthcoming) finds that the forced integration and coexistence of multiple Native American subtribal bands through the reservation system has a long-term negative effect on the welfare of reservations. On the other hand, Jha (2013) finds that Indian ports with a history of cooperation between Muslim and Hindu merchants witnessed fewer violent conflicts between 1850 and 1950.

This paper also contributes to the empirical literature on the relationship between religiosity and education. Meyersson (2014), using RDD design for 1994 municipality elections in Turkey, finds that having been ruled by a municipality mayor affiliated with an Islamist party increases female education. He argues that municipal mayors affect female education by giving construction permits to religious foundations to build schools that often allow girls to wear headscarves and attend religious courses. The mechanism I put forward, i.e., the secularization of education in the Republican period hindered the educational attainment of pious Muslims, is consistent with the explanation of Meyersson (2014). Gulesci and Meyersson (2014) exploit the extension of compulsory schooling in Turkey and find that the increase in education decreases religiosity of women. Cesur and Mocan (2013) exploit the same education reform and find that the increase in education decreases the support of women for Islamist parties, whereas it has no impact for men. In a different setting, Hungerman (2014) finds that education leads to lower levels of religious participation in later life in Canada.

The rest of the paper is organized as follows. Section 2 provides historical background. Section 3 presents the data and hypotheses. Section 4 discusses the empirical strategy and results. Section 5 discusses alternative mechanisms. Section 6 investigates robustness of the results. Section 7 concludes.

2 HISTORICAL BACKGROUND

2.1 OTTOMAN INTERCOMMUNAL RELATIONS

The Ottoman Empire was an Islamic state founded by Turkish tribes circa 1299 and dissolved in 1922. At the peak of its power, the Ottoman Empire stretched from Southeast Europe to the Caucasus, from the Middle East to North Africa. During its territorial expansion, the Ottoman state incorporated many non-Muslim peoples, including Christians of different denominations and Jews. Under the Ottoman rule, monotheistic non-Muslims, i.e., Christians and Jews, enjoyed a considerable measure of communal autonomy. Because Sharia, the canonical law based on the Qur'an, did not regulate relations between non-Muslim subjects, their organization was determined by their own religious law (Shaw, 1977, p. 151). The Ottoman state organized its non-Muslim subjects as separate communities, known as *millets*, according to their religious affiliation and gave them administrative autonomy not only in the execution of spiritual matters, but also in the administration of schools and regulation of certain branches of civil law, such as marriage, divorce, and inheritance (Masters, 2009). These institutional features enabled Christians and Jews to preserve their communal identities.

The Ottoman social organization was not egalitarian: in exchange for tolerance and protection of the sultan, non-Muslim subjects had to pay a special poll tax and endure certain legal restrictions that put them in a lower social position than that of Muslims (Sonyel, 1991). The spatial restrictions imposed on non-Muslims, such as prohibition to build or occupy houses near a Muslim place of worship, led to residential segregation (Göçek, 1993). Moreover, sumptuary laws visually distinguished non-Muslims from Muslims by specifying the range of acceptable clothing for them (Quataert, 1997). This social stratification was stable until the rise of nationalism in the nineteenth-century, at which time Christian subjects of the Empire started to revolt, demanding the right to political self-determination, which contributed to the disintegration of the empire.

2.2 THE ARMENIAN QUESTION

The first record of autonomous Armenian rulers dates to the sixth century BC, and the historical lands of Armenians lay between the Black, Caspian, and Mediterranean seas (Bournoutian, 2002, pp. 19—20). The Ottoman Empire conquered the region known as Western Armenia at the beginning of the sixteenth century and ruled it until its dissolution in 1922. Panel (a) of Figure 1 shows the spatial distribution of Armenians within Turkey in 1914. Armenians lived mostly in eastern Turkey, particularly around Lake Van, close to Mt. Ararat. A sizeable Armenian population resided on the eastern shores of the Marmara Sea and in the Cilicia region around the northeast shores of the Mediterranean Sea — as a result of migrations that took place under the Byzantine rule (Bournoutian, 2002, p. 88).

Many of the prosperous merchants, traders, and artisans throughout the empire were Armenian (Hovannisian, 1986). Though Armenians made up only 7.2 percent of the population in 1914, they accounted for 23 percent of the 18,053 local traders and 30 percent of the 6,507 industrial manufacturers and craftsmen in 1912, according to Ottoman statistical yearbooks. In addition, 12 of 40 private bankers in the imperial capital in 1912 were Armenian (Sonyel, 1993, pp. 258—259). In eastern Turkey, Armenians dominated the nonagricultural sectors at the local level.

In the second half of the nineteenth-century, Armenians had started to request reforms that would ensure the security of their people and property from corrupt officials and marauding bands. In February 1914, Russia forced the Ottoman Empire to sign the Eastern Provinces Reform Treaty (*Vilayât-ı Şarkiyye Islahatı*), according to which six Turkish Armenian provinces would be combined into two administrative regions with broad local autonomy (Reynolds, 2011, pp. 114—115; Hovannisian, 1986). The leaders of the Committee of Union and Progress (CUP), the government party at the time, were convinced that this reform would lead to the independence of Turkish Armenia (Reynolds, 2011, p. 75). The First World War provided them with the opportunity to suspend it, but the Caucasus campaign against Russians resulted in a catastrophic defeat for the Ottoman Empire in early January 1915 (Erickson, 2001, pp. 51—65). Historians argue that in March 1915, anticipating a Russian counterattack, the CUP decided to displace the Armenian population in order not to lose control of Armenia if they were defeated (Kévorkian, 2011, p. 244; Akçam, 2004, pp. 165—66).

The deportation of Armenians began on April 24, 1915, with the arrest of the Armenian elite in Istanbul under the pretext of the Armenian revolt in Van. In May 1915, the Interior Minister, Taalat Pasha, ordered the deportation of Armenians from war zones and coastal areas to the relocation centers in the deserts of Syria, and a month later, he passed the order that dictated the deportation of all Armenians (Dündar, 2008, pp. 276—298). By the beginning of 1917, more than 800,000 Armenians, irrespective

of gender, age, or political involvement, had already been displaced. According to an American consulate report, 486,000 deportees reached the deserts of Syria, but the exact number of survivors is unknown (Sarafian, 2004, pp. 489—490).[3]

Even though the implementation of deportations varied across regions, a general pattern emerges (Kévorkian, 2011, pp. 289—621). The detainment of local Armenian elites accused of planning an insurgence preceded the deportations. In addition, government officials waged a propaganda campaign that portrayed Armenians as "domestic foes": they displayed the weapons turned in by Armenians or confiscated during house searches. The government replaced local officials who refused to obey the deportation orders with CUP loyalists. Involvement of the local Muslim population in the liquidation of Armenians was limited, and massacres rarely took place on the spot. The army escorted deportation convoys out of towns, where they were attacked and sacked by paramilitary groups organized by the Special Organization (*Teşkilat-ı Mahsusa*), an intelligence agency founded by the CUP.

The Treaty of Lausanne, signed on July 24, 1923, marked the end of the centuries-long coexistence of Muslims and non-Muslims in Turkey. With this treaty, Turkey rejected the return of Armenians en masse, and Turkey and Greece agreed to exchange the Muslim population in Greece and the Orthodox population in Turkey.[4] Panel (b) of Figure 1 shows that there were almost no Armenians remained in Turkey in 1927. Panels (a) and (b) of Figure 2 present the distribution of Greeks in 1914 and 1927, respectively, and show that the presence of Greeks in Turkey ended almost entirely after WWI, similarly to that of Armenians.

2.3 SECULARIZATION OF EDUCATION

The Turkish government started to secularize the education system when it enacted the Unification of Education Law (*Tevhid-i Tedrisat*) on March 3, 1924. This reform closed the Qur'an schools (*sıbyân mektepleri)*, where the sole aim of education was to teach students to read and recite the Qur'an (Berkes, 1998, pp. 465—67; Somel, 2001, pp. 17—20). The government gradually phased out religious instruction from the primary school curriculum over the next several years and removed Arabic from the curriculum in 1928 (Winter, 1984). Moreover, the government promulgated a law

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[3]Bardakçı (2008) published a booklet that was found in the personal archives of Talaat Pasha, who orchestrated the deportation and massacre of Armenians. This booklet lists the number of Armenians in 1914 and the number of remaining Armenians at the time of its preparation, which is February 1917 according to Sarafian (2011, pp. 7—8). This booklet shows that out of 1,112,614 Armenians residing in the territories of Turkey in 1914 only 284,157 were still in Turkey in February 1917. Moreover, this booklet states that Armenian population should be inflated by about 30 percent due to an undercounting problem.

[4]The Muslim population in western Thrace and the Orthodox population in Istanbul and the Aegean islands of Imbros (Gökçeada) and Tenedos (Bozcaada) were exempted from the population exchange.

that replaced the Arabic script with the Latin alphabet on November 1, 1928 (Fortna, 2011, p. 77). Between 1928 and 1949, there was no religious instruction in the school curricula.

In 1949, one year before the first multiparty election, the government opened Imam-Preacher (İmam Hatip) vocational programs, which would train preachers and religious functionaries under the authority of the Ministry of Education to meet the voters' demand for religious instruction. In 1951, the new government turned the ten-month vocational training programs into a seven-year school and opened a series of religious vocational junior high schools and high schools (Yavuz, 2003, p. 123). The number of Imam-Preacher schools substantially increased during the periods in which Islamist parties participated in coalition governments. In the 1996—1997 school year, there were 601 religious vocational junior high schools, and 12.16 percent of all junior high school students were enrolled in these schools.

3 DATA AND HYPOTHESES

HISTORICAL POPULATION DATA. The Ottoman Empire registered its citizens according to their religious affiliation. I use the official Ottoman population data of 1914, published by Karpat (1985), to identify the spatial distribution of Armenians and Greeks in 1914.[5] I compute the share of Armenians and Greeks in 1914 at the district level, which corresponds to second-level subnational divisions of Turkey. I consider the Armenian Patriarchate's census of 1913—14 as an alternative data source to identify the spatial distribution of Armenians and check the robustness of the results to its use in section 6. Ottoman population registers do not separately tabulate the population of ethnic groups that constituted the Muslim community, i.e., Arabs, Kurds, Turks, and others. The earliest possible date to identify the spatial distribution of Kurds and Arabs is 1927. Hence, I impute the Kurdish and Arabic shares in 1914 and control for them in the empirical analysis, since ethnic minorities might interact differently with the institutions of the Turkish nation-state.[6] Panel A of Table B1 in Supplementary Appendix B describes the historical population data.

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[5]I exclude Istanbul from the sample for two reasons. First, residents of Istanbul were exempted both from the deportation of Armenians and the population exchange between Greece and Turkey. Second, it was the capital of the Ottoman Empire for almost five centuries and had vacuumed all types of economic input from the rest of the Empire, and hence had a different development trajectory. Moreover, I exclude from the sample the districts in the northeast of Turkey that were under Russian rule between 1878 and 1918, two islands in the Aegean Sea that joined Turkey in 1923, and Hatay Province in the south, which was a part of Syria between WWI and 1938. See the districts marked as 'No Data' in Figure 1 for the districts that were not a part of Turkey in 1914 or between WWI and 1938.

[6]I impute the share of Kurds and Arabs in 1914 by multiplying their respective shares in 1927 with (1 — Armenian population in 1914 / Total population in 1914). See Appendix A.3 for more details.

ISLAMIST POLITICS AND RELIGIOSITY OUTCOMES. The first hypothesis I test is whether the residents of localities with a greater historical presence of Armenians are more religious compared to the residents of other localities. I consider the support for Islamist parties at the district level as my first measure of religiosity. Turkey had 957 districts (second-level administrative subdivisions) in 2010.[7] I define an Islamist party as one whose ideology is derived from or shaped by Islamic ideas and which mobilizes its supporters on the basis of shared religious identity (Yavuz, 2009, p. 7). Political Islam entered the Turkish political sphere in the 1970s; Necmettin Erbakan (1926-2011), the leading figure of Islamist politics in Turkey, founded a series of parties around his pro-Islamic ideology over the next 30 years. In 1996, he became the first prime minister to have centered his political discourse on Islam (Yavuz, 2003, pp. 34, 241). I collected data on every parliamentary election in which at least one Islamist party participated, namely the 1973, 1977, 1991, 1995, 1999, 2002, 2007, and 2011 parliamentary elections.[8]

I consider religious practices, such as performing prayer *namaz* (*salat*) and fasting, as another set of religiosity measures. Data on religious practices come from the 2008 Turkish Demographic and Health Survey (hereafter TDHS 2008), which is representative at the national level. I use the TDHS 2008 ever-married-women module, which includes information on religious practices and basic socioeconomic variables for 6,559 women between the ages of 15 and 49. Information on religious practices comes from two questions asked in the survey: "Do you perform *namaz* (prayer)?" and "Do you fast?" The answers to these questions are coded as 0 for "No," 1 for "Irregularly," 2 for "Regularly" to create an ordered discrete variable for each religious practice. Then, I construct a composite religiosity index using the first principal components of these two ordered discrete variables. I also construct four dummy variables indicating separately whether the individual performs *namaz* regularly, fasts regularly, performs *namaz* at all (regularly or irregularly), and fasts at all (regularly or irregularly). In the TDHS 2008 dataset, the most detailed information available on respondents' place of residence is province (first-level administrative subdivision) and not district; Turkey comprises 81 provinces. Panel A of Table B3 in Supplementary Appendix B describes the support for Islamist parties and religiosity outcomes. Figure B1 in Supplementary Appendix B shows Armenian and Greek shares in 1914 at the province level. Table B2 in Supple-

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[7]The number of districts increased from 369 to 957 from 1914 to 2010. As cities have grown, new districts have been created to facilitate the public administration. See Appendix A.1 for more information on the matching procedure.

[8]Turkey has had a multiparty regime since 1945. Party-list proportional representation rule is in place, and party-lists are at the province level. Since 1961, seats in the parliament are allocated through the D'Hondt method, which is an electoral formula that allocates seats and slightly favors large parties and coalitions over scattered small parties. For political parties, there is also a nationwide threshold of 10 percent to secure any representation in the parliament since 1983, whereas there is no election threshold for individual candidates.

mentary Appendix B describes the historical population data and geographical controls for the TDHS 2008 sample.

DEVELOPMENT OUTCOMES. The second hypothesis I test is whether the historical presence of Armenians affects socioeconomic development across districts, in particular on education outcomes. I focus on human capital investment levels because, on the one hand, the historical presence of Armenians might improve education through its impact on Muslims' occupational choices, and on the other hand, the historical presence of Armenians might worsen education through its impact on the religiosity of local Muslim population. At the local level, Armenians dominated the nonagricultural sectors, such as industry and commerce, that are likely to have a higher return to education. After the deportation of Armenians, local Muslims could have had incentives to invest in education more and take up occupations in industry and commerce. However, after the secularization of education, pious Muslims faced a trade-off between transmitting their religious cultural traits to their offspring and educating them within the secular education system.

I use census data at the district level to calculate the literacy rate and the primary school completion rate in 1985, 1990, and 2000. I also proxy the poverty rate in 2011 with the share of population affiliated with a means-tested noncontributory social protection program called Green Card (*Yeşil Kart*). In addition, I compute the share of population with a profession in industry or in commerce in 1985, 1990, and 2000 and the share of self-employed people in 1985, 1990, and 2000 to investigate whether the historical presence of Armenians has a long-term impact on Muslims' choice of economic activities across districts. I consider land inequality as a potential mechanism, since the deportation of Armenians might have increased it, if the government had not distributed equally the abandoned Armenian properties, or if the local elite had captured them. To test for this mechanism, I calculate the land gini index in 1997 using data on landholding distribution. Panel B of Table B3 in Supplementary Appendix B describes contemporary development outcomes.

SECULARIZATION OF EDUCATION. I collected data on the literacy rates in 1927 and 1945 at the district level to investigate the link between religiosity and secular education. Literacy in 1927 means literacy in the Arabic script and proxies the stock of educational attainment under the nonsecular education system, and literacy in 1945 is literacy in the Latin alphabet and captures the educational attainment under the secular education system. Moreover, to isolate the demand for secular education from school supply, I collected data on the number of schools in 1927 and 1945 and calculate the number of primary schools per school-age children in these years. Data on the literacy in the Arabic script in 1927 and the literacy in the Latin alphabet in 1945 come

from published census results of 1927 and 1945, and data on the number of schools in 1927 and 1945 come from the published education statistics reports. Panel C of Table B3 in Supplementary Appendix B describes historical education outcomes.

To further investigate the link between religiosity and demand for secular education, I use the 5 percent microdata sample of the 1985 and 1990 censuses of the Republic of Turkey provided by the Integrated Public Use Microdata Series (IPUMS) project. IPUMS microdata samples provide information on respondents' birth year and province. They allow me to test whether the historical presence of Armenians has a differential impact on education outcomes for the cohorts that were and were not affected by the secularization reforms implemented in the 1920s.

Village-Level Data. Last but not least, I combine information on the ethnic origin of villages that comes from Nişanyan (2010) with data on contemporary political and education outcomes at the village level. In the 1950s, the Turkish government set up a commission to replace locality names that sound foreign with Turkish ones. The commission changed the names of more than 12,000 villages and parishes. Sevan Nişanyan, a linguist and writer of Armenian origin from Turkey, compiled the list of the localities, whose names were changed and identified the linguistic origin of their old names. I use this information to classify villages as a former Armenian village, a former Greek village, an Arabic village, or a Kurdish village. I was able to match 31,283 out of 34,921 villages that existed in 1985 to the rest of the dataset; the attrition rate from 1985 to 2011 is 10.4 percent. Parliamentary election results at the village level are available from 1991 onward. Table B5 in Supplementary Appendix B describes village-level data.

4 Effect of The Historical Presence of Armenians

4.1 Estimation Strategy

I estimate the following equation to investigate the long-term impact of the historical presence of Armenians in Turkey at the district level:

$$Y_d = \alpha + \beta ArmenianShare_{1914,d} + \gamma X_d' + \mu_r + \epsilon_d \tag{1}$$

where Y_d stands for the outcome of interest at the district level. $ArmenianShare_{1914,d}$ stands for the Armenian share in 1914 in district d. X_d, the vector of controls at the district level, always includes the Greek share in 1914 and the imputed Kurdish and Arabic shares in 1914. μ_r stands for geographical-region fixed effects.[9] Error term ϵ_d

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[9]See Appendix A.3 for the definition of geographical regions. See Figure A2 in Supplementary

has a component that is common to all districts that were part of the same district as of 1914, i.e., $\epsilon_d = \epsilon_{1914,d} + \xi_d$. The standard errors are thus clustered at the administrative level of 1914.[10]

The primary parameter of interest is β, i.e., the long-term impact of the Armenian share in 1914. It shows whether residents of localities with a higher Armenian share in 1914 behave differently compared to residents of other districts. Estimating β with OLS would yield biased estimates if Armenians self-selected into localities depending on unobservable factors that are correlated with the outcomes. First, Armenians might have lived more in districts where the Muslim population was moderately religious or more educated to begin with. If this were the case, the impact of the favorable traits of Muslims would be attributed to the historical presence of Armenians. Therefore, OLS estimates for education outcomes would be upward biased, whereas those for religiosity outcomes would be downward biased.

Second, Armenians, as a minority group, might have self-selected into areas with bad geography. If this were the case, the impact of bad geography would confound that of the Armenian distribution in 1914. OLS estimates for development outcomes are likely to be downward biased because it might be more difficult to provide public services in areas with bad geography. Bad geography can cause an upward bias in OLS estimates for religiosity outcomes through its impact on education, given the negative relationship between secular education and religiosity identified in the literature. Moreover, the Armenian share in 1914 might not capture the historical presence of Armenians perfectly. Such a measurement error would result in attenuation bias.

4.2   INSTRUMENTAL VARIABLE STRATEGY

In order to have an unbiased estimate of β, I instrument the Armenian share in 1914 with travel distance to Mt. Ararat, which was the geographical center of the ancient Armenian kingdoms.[11] Armenians believe that the founder of the Armenian nation, Hayk, settled in the region of Mt. Ararat after his flight from Babylon (Kurkjian, 2008, p. 42). The idea behind using walking distance to Mt. Ararat as an instrumental variable is to predict where Armenians settled once they had migrated from their ancestral homelands, conditional on the cost of traveling. To capture the cost of traveling in

Appendix A.3 for their visualization.

[10]There were 957 districts in Turkey in 2011, but only 369 districts in 1914. When a district reaches a certain population, it splits into new districts for the ease of public administration. Most of the border changes happened due to these splits. However, between 1914 and 1935, some districts were merged because their population fell substantially as a result of wars. There are 18 such cases between 1914 and 1927, and three cases between 1927 and 1935. I consider the merged district as a single administrative unit and aggregate the historical population data at the merged-district level. See Appendix A.1 for more information on the matching procedure.

[11]See, for instance, Maps 6, 7, and 9 in Bournoutian (2002) showing, respectively, Yervanduni Armenia in c. 250 B.C., Arteshian Armenia in c. 150 B.C, and Arsecid Armenia in c. 150 A.D.

ancient times, I neglect both modern and past road networks and assume that travel cost depends solely on topography.[12] Panel (a) of Figure 3 visualizes travel distance to Mt. Ararat at the district level.

The identification assumption is that travel distance to Mt. Ararat is orthogonal to outcomes conditional on geographical-region fixed effects and the vector of controls X_d. In other words, travel distance to Mt. Ararat has no impact on outcomes other than through the historical presence of Armenians. A major concern about the validity of the instrument is that it is correlated with other distance measures that might affect outcomes. Distance to Mt. Ararat, given its proximity to the border, might capture a border effect; people residing in border regions might feel more exposed to foreign threats or immigration and thus behave differently, i.e., be more nationalistic or conservative. I address this concern by controlling for travel distance to the eastern border of Turkey to partial out any possible border effect. I also control for travel distance to Istanbul (Constantinople), the imperial capital, which proxies the capacity of the Ottoman Empire to enforce control and extract resources, and for travel distance to the coast, which proxies the transaction costs and the impact of international maritime trade on the local population. Travel distance to Istanbul allows for traveling by sea, whereas other travel distance measures allow for only travel on foot. I assume that travel by sea is five times as fast as travel on foot.

Importantly, I control for geographical-region fixed effects to net out the between-region variation. Therefore, identification stems from within-region variation. Panel (b) of Figure 3 visualizes the residuals obtained from regressing travel distance to Mt. Ararat on the full set of controls. (Please see the next subsection for the historical and geographical controls included.) These residuals are the part of the instrument that is orthogonal to controls. Panel (b) shows that, conditional on the controls, travel distance to Mt. Ararat no longer captures an east-west gradient.

HISTORICAL AND GEOGRAPHICAL CONTROLS. In addition to distance measures and geographical-region fixed effects, I control for a rich set of historical and geographical controls to make sure that travel distance to Mt. Ararat does not capture the impact of any other determinant of the outcomes of interest. Population density in 1914 proxies the development level of districts in 1914. I construct a dummy variable that takes the value of 1 if the district was the central district of its province in 1914, and 0 otherwise. I also construct a measure indicating whether the district is within one-and-a-half days of the major nineteenth-century ports, since port towns and their hinterland might be more developed. In addition, I construct an indicator variable that takes the value of 1 if the district had access to a railroad network in 1914, and 0

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[12]See Appendix A.2 for more information on the construction of distance measures.

otherwise.

The last set of controls proxies the geographical endowment of districts. I control for the existence of rivers and streams, calculated as length in kilometers normalized by surface area of the district. Rivers and streams in Turkey are mostly non-navigable; I include these controls to proxy the population-retention capacity of districts under rain-fed agriculture. I also control for the suitability of districts for wheat, cotton, and olive cultivation. The last two geographical factors I control for are mean latitude and altitude of the district.[13]

Table 1 describes historical and geographical characteristics separately for two subsamples, defined as above-median and below-median according to the Armenian share in 1914, and shows the dimensions in which these subsamples differ from each other. The fall in population size between 1914 and 1927 is greater in the above-median sample than it is in the below-median sample, and districts in the above-median sample failed to attain their 1914 population levels by 1935, whereas those in the below-median sample did. Armenians lived more in the central district of provinces and in districts with a greater Kurdish presence. Further, Armenians were more concentrated in districts that are closer to Mt. Ararat and the eastern border, and farther from Istanbul and the coast. In terms of geographical endowment, districts in the above-median sample, compared to those in the below-median sample, are at higher altitudes, colder, receive less precipitation, and less suitable for olive cultivation, but have better access to water resources and are as suitable for wheat and cotton cultivation.

VALIDITY OF THE INSTRUMENTAL VARIABLE. To address the concern that the instrumental variable, travel distance to Mt. Ararat, might capture an east-west gradient even after controlling for region fixed effects and aforementioned controls, I do the following: I construct treatment and placebo samples and replicate the analysis separately for each of them. The placebo sample consists of districts in western Turkey, where the historical presence of Armenians is negligible. The treatment sample consists of districts in the east, where the historical presence of Armenians is substantial. Panels (a) and (b) of Figure 4 show, respectively, the treatment and placebo samples. If the instrumental variable validates the exclusion restriction, i.e., travel distance to Mt. Ararat affects outcomes only through the historical presence of Armenians, one would expect to observe that it has no impact on outcomes in the placebo sample, where the historical presence of Armenians is limited. In section 4.4, I show that travel distance to Mt. Ararat has no impact outcomes in the placebo sample, and that the main

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[13]Figure A1 in Supplementary Appendix A.3 presents the location of Istanbul, major nineteenth-century ports, rivers and streams, and a railway network in 1914. Figure A3 in Supplementary Appendix A.3 visualizes the distribution of travel distance measures at the district level. Figure A4 in Supplementary Appendix A.3 shows which districts were within one-and-a-half-days of the major nineteenth-century ports.

results hold within the eastern region in the treatment sample.

4.3 RESULTS

FIRST STAGE. I start the analysis by checking whether the instrumental variable, travel distance to Mt. Ararat, is a good predictor of the Armenian share in 1914 to produce unbiased results in 2SLS conditional on other observables. Table 2 reports the first-stage results. Column 1 shows the correlation between travel distance to Mt. Ararat and the Armenian share in 1914 without any controls, and Panel (a) of Figure 5 visualizes the regression plot of the OLS estimate. There is a statistically significant negative correlation between travel distance to Mt. Ararat and the Armenian share in 1914. The farther from Mt. Ararat a district is, the lower the Armenian share in 1914 is in that district. Column 2 includes geographical-region fixed effects, and each columns 3 through 6 include an additional set of controls in addition to geographical-region fixed effects. Introducing additional controls does not the alter results qualitatively, but it does decrease the size of the point estimate, indicating that the OLS estimate without any controls is upward biased due to selection on observables. In particular, the inclusion of other travel distance measures and geographical characteristics affects the estimates quantitatively.

Column 6 shows the correlation between travel distance to Mt. Ararat and the Armenian share in 1914 conditional on the full set of controls, and Panel (b) of Figure 5 visualizes it. One day of travel (approximately 30 kilometers) from Mt. Ararat is associated with a 1.04 percentage point lower Armenian share in 1914 on average. Being ten travel days away from Mt. Ararat reduces the Armenian share in 1914 in a given district by one standard deviation on average. The F-statistics is far above 10, demonstrating that travel distance to Mt. Ararat has a substantial predictive power on the distribution of Armenians within Turkey in 1914.

SUPPORT FOR ISLAMIST PARTIES AND RELIGIOSITY. This subsection explores the impact of the historical presence of Armenians on the religiosity of the local population today, expressed in terms of support for Islamist parties and performing religious activities. Table 3 reports the impact of the Armenian share in 1914 on the share of votes cast for Islamist parties in parliamentary elections from 1973 to 2011. I investigate the relationship between the historical presence of Armenians and the support for Islamist parties for the elections that took place before and after 1997 separately because of the 1997 military memorandum. On February 28, 1997, the National Security Council, a state body, whose aim is to advise the government on national security issues, passed a memorandum that consisted of instructions to the government regarding

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secularism and forced the Islamist prime minister, Necmettin Erbakan, to resign.[14] In 1998, the Constitutional Court closed Erbakan's political party and banned him from politics for five years on the basis of antisecularism (Yavuz, 2003, pp. 239—247). A group of members of Parliament from his banned party detached themselves from his political ideology and formed the Justice and Development Party (*Adalet ve Kalkınma Partisi*), which pursues socially conservative but economically liberal policies (Yavuz, 2009, p. 84).

Columns 1 and 2, respectively, report the results for the elections that took place before and after 1997. I collapse the data for each election at the administrative level of 1973 — the year in which an Islamist party participated in parliamentary elections for the first time — then I pool them together. I find that the historical presence of Armenians has a statistically significant positive impact on the support for Islamist parties before 1997, whereas it has no statistically significant impact on the share of votes cast for Islamist parties after 1997. The point estimate is larger for the elections held before 1997 than it is for those held after 1997. Moreover, the adjusted R-squared of the OLS estimates is higher for the elections held before 1997 than it is for those held after 1997, indicating that the estimated model is more informative for elections held before 1997. This can be explained by the fact that the support for Islamist parties proxies religiosity worse in the elections held after 1997 than it does in the elections held before 1997. Though the Justice and Development Party relies on Islamic discourse to mobilize its pious supporters, it managed to get support of a broader voter base in urban areas by implementing liberal economic policies and stabilizing the economy of Turkey. Hence, the support for Islamist parties more than doubled after 1997.

A ten percentage point increase in the Armenian share in 1914 (≈ 0.96 SD) increases the share of votes cast for Islamist parties before 1997 on average by 4.31 percentage points, which is equal to almost one third of the mean share of votes cast for Islamist parties in this period. Columns 4 through 7 show the results separately for each election that took place between 1973 and 1997; point estimates vary slightly across election years and are bounded between 0.274 and 0.455. The size of the IV estimates is almost three times that of the OLS estimates, which suggests that the OLS estimates were downward biased, consistent with the scenario that Armenians self-selected into localities where Muslims were religiously more moderate to begin with. The difference between the size of the IV and OLS estimates is also consistent with the attenuation

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[14]Articles 2 through 4 of the 1997 military memorandum focused on secular education. They dictated the subordination of the private schools and dormitories of religious associations to the Ministry of Education in accordance with the Unification of Education Law of 1924, the extension of compulsory schooling to eight years (thus the closure of Imam-Preacher junior high schools), and the implementation of reforms that would allow children to follow Qur'anic courses only after the completion of compulsory education and only in establishments that are scrutinized by the Ministry of Education.

bias due to measurement error. Overall, the results show that residents of districts with a higher Armenian share in 1914 support Islamist parties than residents of other districts do.

Table B7 in Supplementary Appendix B shows the impact of the historical presence of Armenians on the support for nationalist parties from 1973 to 2011. I repeat cross-sectional analysis for every election in which at least one nationalist party participated. I find that the historical presence of Armenians has a negative impact on support for nationalist parties, if anything. This piece of evidence reassures that religion rather than ethnicity defined the communal boundaries and group identity in the Ottoman Empire, and that the Muslim population perceived Armenians as a rival religious group rather than a rival ethnic group.

Next, using the TDHS 2008, I assess the impact of the Armenian share in 1914 on the intensity of performing religious activities. The most detailed information on respondents' place of residence in this survey is province (first-level administrative subdivision). For this reason, I aggregate the Armenian share in 1914 and covariates at the province level and estimate the following equation:

$$Y_{i,p} = \alpha + \beta ArmenianShare_{1914,p} + \gamma X_p' + \delta W_i' + \mu_r + \epsilon_{i,p} \tag{2}$$

where $Y_{i,p}$ stands for the religiosity outcome of individual i residing in province p. X_p, the vector of controls at the province level, includes the Greek share in 1914, the imputed shares of Kurds and Arabs in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of the districts that are within one-and-a-half days of the major nineteenth-century ports, share of the districts that had access to railroad the network in 1914, length of primary and secondary rivers normalized by surface area of the province, suitability indices for wheat, olive, and cotton cultivation, and mean altitude and latitude of the province. W_i, the vector of controls at the individual level, includes age fixed effect and native language of the individual, the wealth level of her household (indicator variables for vingtiles), and a dummy variable indicating whether she resides in an urban area. μ_r stands for geographical-region fixed effects. Standard errors are clustered at the province level.

Table 4 reports the results. Living in a province with a higher Armenian share in 1914 increases the likelihood of performing religious activities, namely performing *namaz* and fasting (two of the five pillars of Islam). An increase of ten percentage points in the Armenian share in 1914 (≈ 1.19 SD) increases the composite religiosity index by 0.252 percentage points (≈ 0.23 SD) and the likelihood of regularly performing *namaz* and fasting, respectively, by 9.5 and 5.6 percentage points on average. It also increases the likelihood of performing namaz at all and fasting at all, respectively, by 5.8 and

2.9 percentage points on average. The size of the IV estimates is four to nine times that of the OLS estimates, which suggests that OLS estimates were downward biased, consistent with the self-selection of Armenians into localities in which the Muslim population was initially more moderate. The difference between the size of the IV and OLS estimates can also result from attenuation bias due to measurement error.

The omitted variable bias in the OLS estimate is likely to be larger for religiosity outcomes than it is for other outcomes for two reasons. First, due to lack of information in the survey data, I cannot control for a major determinant of performing religious practices, the sect of Islam that respondents adhere to. *Alevi* muslims of Turkey neither perform *namaz* at all nor regularly fast during Ramadan, and their presence is positively correlated with that of Armenians, since they live mostly in the eastern Turkey, where the historical presence of Armenians is greater. Therefore, the omission of controls for spatial distribution of *Alevis* would cause a downward bias. Second, even though the travel distance to the eastern border is highly correlated with travel distance to Mecca, the estimated model fails to account for the spread of Islam in the territories of Turkey prior to the Ottoman Empire. The Islamization of Minor Asia took place mostly during the reign of Seljuk Sultanate of Rum, which existed from 1077 to 1307. The territories of the Sultanate marginally overlapped with the historical Armenian homeland, but the capital and the major cities of the Sultanate fell outside the historical Armenian homeland. Therefore, the omission of controls for the Seljuk presence is likely to cause a downward bias. The IV strategy corrects for these omitted variable biases.

Table B8 in Supplementary Appendix B presents the results controlling for the number of *Alevi* worship places, *cemevi*, per 100 mosques at the province level, a dummy variable that takes the value of 1 if the province falls within the territories of the Seljuk Sultanate of Rum (extensive margin), and the number of monuments related to religion or religious education built by the Seljuks normalized by the surface area of the province (intensive margin).[15] Though these measures are imperfect proxies, they are correlated with the religiosity in the expected way. The proxy for *Alevi* share is negatively and significantly correlated with religiosity, whereas being a part of the Seljuk Sultanate of Rum and the presence of another Seljuk monument related to religion or religious education per 1,000 square kilometers are positively correlated with religiosity. Controlling for these measures increases substantially the size of the OLS estimates of the Armenian share in 1914.

To sum up, the results show that residents of provinces with a greater historical presence of Armenians developed a deeper attachment to the principles of Islam and

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[15]Places of worship (*cami, mescit, minare, namazgah*) and monastic complexes (*zaviye, tekke*) are classified as monuments related to religion. Religious education centers (*medrese, darulhuffaz, huffaz, mekteb*) are classified as monuments related to religious education.

thus perform religious practices more than the residents of other provinces do.

CONTEMPORARY EDUCATION OUTCOMES AND POVERTY. In this subsection, I analyze the impact of the historical presence of Armenians on contemporary education outcomes, poverty rates, and the distribution of professions across districts. The education outcomes in consideration are the literacy rate and the primary school completion rate. I conduct cross-sectional analysis separately for all census years, for which the education outcomes are available at the district level, namely 1985, 1990, and 2000. The purpose of doing so is to find a persistent effect over time, thereby providing satisfactory evidence that differences in education outcomes occur due to the historical presence of Armenians.

Columns 1 through 3 of Table 5 present the results for literacy rate, and columns 4 through 6 present the ones for primary school completion rate. Panel A shows that the Armenian share in 1914 has a statistically significant negative impact on both the literacy rate and the primary completion rate in all census years. The size of the IV estimates are twice that of the OLS estimates, which suggests that OLS estimates were upward biased, consistent with the scenario that Armenians self-selected into localities where the Muslim population was initially more educated. The difference between the size of the IV and OLS estimates is also consistent with attenuation bias due to measurement error. An increase of ten percentage points in the Armenian share in 1914 (≈ 0.96 SD) decreases the literacy rate in 1985 on average by 3.31 percentage points, which is equal to 12 percent of the mean illiteracy rate in 1985, and decreases the primary school completion rate in 1985 on average by 3.31 percentage points, which is equal to 8 percent of the mean primary school dropout rate in 1985. Lastly, column 7 illustrates a positive relationship between the Armenian share in 1914 and the poverty rate in 2011. Both the OLS and the IV estimates are statistically significant; the size of the IV estimates is again twice that of the OLS estimate. An increase of ten percentage points in the Armenian share in 1914 (≈ 0.96 SD) increases the poverty rate in 2011 on average by 5.09 percentage points, which equals almost one third of the mean poverty rate. Overall, the results show that residents of districts with a greater historical presence of Armenians are less educated and poorer today than the residents of other provinces are.

DISTRIBUTION OF PROFESSIONS AND ENTREPRENEURSHIP. Lastly, I investigate the impact of the historical presence of Armenians on entrepreneurship and distribution of professions across sectors, since non-Muslims dominated the nonagricultural sectors such as industry and commerce in the Ottoman Empire (Kuran, 2004). Columns 1 through 6 of Table 6 present the impact of the Armenian share in 1914 on the share of population with a profession in industry and in commerce in 1985,

1990, and 2000. I restrict the sample to males aged 12 or older because 41 percent, 38 percent, and 43 percent of women are without any profession, respectively, in 1985, 1990, and 2000. The results show that the Armenian share in 1914 has no statistically significant impact on the share of population with a profession in industry or commerce today. Columns 7, 8, and 9 show the impact of the Armenian share in 1914 on entrepreneurship levels today. Entrepreneurship outcomes in consideration are the share of self-employed population in 1985, 1990 and 2000. The results show that the historical presence of Armenians does not have a statistically significant impact on entrepreneurship levels today.

Table B9 in Supplementary Appendix B shows that the historical presence of Armenians has a statistically significant negative impact on the share of population with a profession in industry and in commerce in 1927. Since Armenians dominated the industry and commerce sectors at the local level, their deportation is likely to have caused a fall in the number of people with a profession in these sectors. Columns 3 and 6 show that this negative impact became statistically indistinguishable from zero by 1945. Overall, the results suggest that the deportation of Armenians has a negative impact on the share of population in industry and commerce in the short run, but the negative impact of the deportation did not persist over time.

4.4 Validity of the Instrumental Variable

To provide evidence that the instrumental variable, travel distance to Mt. Ararat, affects outcomes only through the historical presence of Armenians, I replicate the analysis for the placebo sample, i.e., the districts that lay in east-west direction in western Turkey, where the historical presence of Armenians is very limited. Panel C of Table 7 presents the reduced-form estimate. It shows that travel distance to Mt. Ararat has no significant impact on the support for Islamist parties and the likelihood of competing primary school. It also shows that travel distance to Mt. Ararat has a statistically significant impact on religiosity and poverty rates, however the direction of the effect is the opposite of that in the full sample. IV estimates in Panel A follow the same pattern as reduced-form estimates.

Another piece of evidence on the reliability of the identification strategy comes from replicating the analysis for the treatment sample, i.e., the districts in the eastern region of Turkey, where the Armenian share in 1914 is sizeable. Panel C of Table 8 shows that the instrumental variable has a statistically significant impact on the outcomes and that the sign of the estimates are the same as those in the full sample. Moreover, the instrument still has considerable power in predicting the distribution of Armenians in 1914 (the F-statistics is above 10). Lastly, Figure B2 in Supplementary Appendix B shows the partial regression plots for the reduced-form estimates reported in Panel C

of Tables 7 and 8. The correlation between travel distance to Mt. Ararat and outcomes in the placebo sample and that in the treatment sample are in the opposite direction.

5 MECHANISMS

5.1 POLARIZATION

To explain both the positive impact of the historical Armenian presence on religiosity and its negative impact on education, I put forward the following mechanism: the coexistence of Muslims and Armenians led to polarization; as a result, the presence of Armenians in close proximity increased the identification of Muslims with their in-group identity, Islam, since religion was the primary dimension that defined communal identity in the Ottoman Empire. Hence, Muslims who lived closer to Armenians became more religious than those who did not. A deeper attachment of Muslims to their religion due to their coexistence with Armenians translated itself into lower demand for education after the secularization of education in the 1920s.

Social identity theory (Tajfel and Turner, 1979) indicates that when the perceived ability to move from one group to another group is limited and the perceived legitimacy and stability of the status differences between groups is low, group members tend to make more intergroup comparisons, hence group identity becomes more salient. In the Ottoman Empire, religion demarcated the community boundaries, and it was impossible to change one's group status without conversion. Non-Muslims in the Empire endured second-class citizenship in exchange for the protection and tolerance of the sultan. This social stratification was stable until the rise of nationalism in the nineteenth-century, at which point, Christian subjects of the Empire started to challenge the legitimacy of the status quo, revolting and demanding the right to political self-determination. Consequently, the Ottoman government recognized the equality of Muslims and non-Muslims before the law with the Imperial Edict of 1856 (Stavrianos, 2000, pp. 250, 292; Cleveland and Bunton, 2013, pp. 81—83). Such a historical context might have contributed to polarization between religious groups, and hence to the stronger attachment of Muslims who lived close to Armenians to their in-group identity, Islam.

Bisin and Verdier (2000, 2001) develop a model of intergenerational cultural transmission, in which preferences and traits of children are acquired through an adaptation and imitation process. According to this model, parents socialize and transmit their preferences to their offspring, motivated by a form of paternalistic altruism, imperfect empathy. Imperfect empathy biases parents toward their own cultural traits and requires that parents evaluate their children's actions with their own (the parents') preferences. An implication of imperfect empathy is relevant for this context: even though

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religious parents care about the economic success of their children, they would not like them to adopt secular norms to achieve it. After the secularization of education in the 1920s, the historical presence of Armenians affected education outcomes through its impact on religiosity. The Turkish government closed the Qur'an schools in 1924, and gradually phased out religious instruction from the curriculum (Winter, 1984; Berkes, 1998, pp. 465—467). Between 1928 and 1949, there was no religious instruction in the school curricula, which made the pious Muslims face a trade-off between transmitting their religious cultural traits to their offspring and educating their children within the secular system. Therefore, the historical presence of Armenians lowered the demand for education through its impact on religiosity after the secularization of education in the 1920s.

I use village-level data on parliamentary election results and ethnic origin of the villages to investigate whether the residents of Muslim villages that are closer to former Armenian villages support Islamist parties more than the residents of other Muslim villages do. I define a former Armenian village as a village whose old name's linguistic origin is identified as Armenian by Nişanyan (2010). I employ a flexible parametric estimation strategy to compare the voting behavior of residents of the Muslim villages within a 25-kilometer radius of former Armenian villages and estimate the following equation:[16]

$$Y_v = \alpha + \beta Armenian_v + \sum_{j=1}^{10} \delta_{2j-2,\ 2j\ km} NearArmenian_{v\ |\ 2j-2,\ 2j\ km} + \gamma X_v' + \epsilon_v \quad (3)$$

where Y_v stands for the support for Islamist parties normalized by the sample mean at the village level. $Armenian_v$ is a dummy variable indicating whether the village is a former Armenian village. $NearestArmenian_{v\ |\ 2j-2,\ 2j\ km}$ is an indicator variable taking value of 1 if the nearest Armenian village is within $2j - 2$ to $2j$ kilometers distance, e.g., within 0 to 2 kilometers, within 2 to 4 kilometers, within 4 to 6 kilometers. X_v, the vector of controls at the village level, includes a dummy variable indicating whether the village is a Kurdish village, a dummy variable indicating whether the village is an Arabic village, travel distances to the nearest province and district centers, travel distances to the nearest river and stream, altitude of the village, suitability indices for wheat, olive, and cotton cultivation, and the natural log of the number of registered voters in the village. Standard errors are adjusted for heteroskedasticity.

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[16]Panel (a) of Figure B3 in Supplementary Appendix B shows a statistically significant positive correlation between the share of Armenian villages in a given district and the Armenian share in 1914 in that district. Panel (b) of Figure B3 shows a statistically significant positive correlation between the share of Armenian villages in a given district and travel distance to Mt. Ararat from that district. These results reassure that historical population data at the district level and information on the linguistic origin of villages are consistent.

The sample is restricted to former Armenian villages and the Muslim villages that are within 25 kilometers of former Armenian villages in eastern of Turkey (see treatment sample in Figure 4). Therefore, identification stems from the variation in the distance to former Armenian villages across villages that are within a 25-kilometer radius of former Armenian villages. The Muslim villages that are within 20 to 25 kilometers of former Armenian villages are the comparison group. Figure B4 in Supplementary Appendix B presents an example of the isodistance curves drawn around former Armenian villages to construct the set of indicator variables, $NearestArmenian_{v \mid 2j-2, \ 2j \ km}$, and of the comparison group villages. Panel (a) of Figure B5 in Supplementary Appendix B shows the distribution of Muslim villages as a function of distance to former Armenian villages.

Figure 6 presents the OLS estimates — point estimates and 95 percent confidence intervals — for β and the vector δ. Given that the dependent variable is normalized by the sample mean, β and the vector δ show the change in percentage, and not in percentage points. Compared to the residents of the Muslim villages within 20 to 25 kilometers of former Armenian villages, the residents of Muslim villages in close proximity to former Armenian villages vote more for Islamist parties. The impact is statistically significant for the villages that are within six kilometers of former Armenian villages, and the size of the estimates gets smaller as the distance to former Armenian villages increases. The residents of the Muslim villages that are within six kilometers of former Armenian villages vote more for Islamist parties on average by 10 percent to 12 percent more compared to the comparison group. The estimates are less precise for the Muslim villages within two kilometers of former Armenian villages. Larger standard errors are likely to be the result of fewer the Muslim villages within two kilometers of former Armenian villages compared to other distance categories, as shown in Figure B5 in Supplementary Appendix B. The results are robust to controlling for basic population controls such as share of females and share of population aged 65 or older in the village (see Figure B7 in Supplementary Appendix B for results).[17]

Figure 6 shows that the estimates for elections that took place in 2002 and after are more precise than the ones for elections held before 2002, and that the decreasing pattern in the estimate size is clearer for elections that took place after 2002 than it is for those that took place before 2000. This might be partly related to the conflict between the Kurdish insurgent group PKK (*Partiya Karkerên Kurdistan*) and the

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[17]Figure B8 in Supplementary Appendix B replicates the analysis for contemporary education outcomes and presents the OLS estimates. Both the residents of the Muslim villages within eight kilometers of former Armenian villages and the residents of former Armenian villages are more literate by about 0.3 percent on average in 1985 and 1990, compared to the residents of other the Muslim villages within 25 kilometers of former Armenian villages. The results are not robust to controlling for basic population controls such as the share of females, and share of population aged 65 or order in the village (see Figure B7 in Supplementary Appendix B for results).

Turkish armed forces, since the violent attacks mostly targeted the provinces in eastern Turkey, which peaked in 1991 and 1992 and remained severe until the capture of PKK leader Abdullah Öcalan in late 1999. The ethnic conflict might have a confounding effect on the voting patterns because it might incite the Kurdish population to vote for pro-Kurdish parties and the Turkish population to vote for pro-nationalist parties. To control for the intensity of terrorist activities across provinces within the treatment sample, I control for province fixed effects and replicate analysis. Figure B6 in Supplementary Appendix B presents the results. Controlling for province fixed effects, the size of the estimates gets smaller as distance to former Armenian villages increases for the elections held before 2002, as it does for the elections held after 2002.

Residents of former Armenian villages, who are likely to be the migrants settled in these villages after the deportation of Armenians, also vote more for Islamist parties than the residents of the Muslim villages within 20 to 25 kilometers of former Armenian villages. This suggests that migration into former Armenian villages has a positive impact on the religiosity. However, the point estimate for former Armenian villages, i.e., migrants, is lower than the one for the Muslim villages within two kilometers of former Armenian villages. Therefore, a spatial spillover of religiosity from the migrants to the Muslim villages closer to former Armenian villages is unlikely to explain the observed voting pattern. Moreover, witnessing the persecution and massacre of Armenians, or participating in them, is also unlikely to explain the higher support for Islamist parties in nearby Muslim villages, for two reasons. First, the massacres rarely took place on the spot, and the involvement of the local Muslim population was limited. The deportees were attacked by paramilitary forces mostly outside the residential areas while they were on the deportation route (Kévorkian, 2011, pp. 289—621). Second, even if witnessing the massacres increased the religiosity of the local Muslim population, it would have affected Muslims who lived in former Armenian villages and not Muslims who lived close to these villages. Overall, the results suggest that, though migration is likely to have played a role, a deeper attachment of Muslims to their religious identity resulted from the historical presence of Armenians in close proximity.

ROLE OF CONFLICT. Would the historical presence of Armenians have had such an impact if there were no conflict between Armenians and Muslims? An ideal counterfactual to answer this question would be a region where Armenians lived but were not deported or persecuted during WWI. Given the absence of such historical experience for Armenians, I turn to the case of Greeks to investigate the role of conflict. Greeks played a similar role in the Ottoman economy and were subject to the same institutions as Armenians, but there was variation in the scale of conflict.[18] During WWI, unlike

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[18]Like Armenians, Greeks dominated industry and commerce at the local level. Greeks constituted 8.3 percent of the population in 1914, whereas they made up 30 percent of the local traders and 43

Armenians, not all Greeks were subject to deportations or persecutions because the Ottoman government feared that such action would provoke the Kingdom of Greece to join Entente Forces (Dündar, 2008, pp. 233—240). Nevertheless, the Greek presence in Turkey came to an end after the Greco-Turkish war of 1919—1922, but the degree to which Greeks were persecuted during this period varied across regions.

I start the investigation by replicating the previous analysis at the village level for former Greek villages and the Muslim villages within a 25-kilometer radius of former Greek villages. Figure 7 presents the impact of the historical Greek presence on the support for Islamist parties from 1991 to 2011 at the village level. Figure 8 shows that Greeks were clustered in several widespread regions. I restrict the sample to former Greek villages and the Muslim villages within 25 kilometers of them within these regions and control for region fixed effects to net out between-region variation in voting patterns. I find that the residents of the Muslim villages that are within two kilometers of former Greek villages vote more for Islamist parties, compared to the comparison villages.

Next, I exploit the variation in the degree of persecution of Greeks across the regions to explore the role of conflict between Greeks and Muslims in explaining higher support for Islamist parties. During the Greco-Turkish war of 1919—1922, the Greek army occupied Thrace and most of western Asia Minor, whereas the Turkish Army controlled eastern Asia Minor. In 1920—21, as the Greek army advanced in western Asia Minor, many Greeks in the Pontus region were deported to the deserts in northern Syria, since "there were revolutionary and separatist elements in the Pontus who were a potential threat to the rear of the Turkish army in the event of a Greek offensive" (Smith, 1998, p. 211; Midlarsky, 2005, p. 342). The degree of persecution of the Greeks in the Pontus region, i.e., the eastern Black Sea coast, was considerably higher than it was in other regions: 90.6 percent of 974,593 Greeks living in Western Asia Minor and Thrace in 1914 were present in Greece in 1928, whereas out of 333,202 Greeks living in the Pontus region, only 54 percent were in Greece in 1928.[19]

Figure 9 presents the impact of the historical Greek presence on the support for Islamist parties in 1991, separately for the three regions presented in Figure 8. The pattern observed in Figure 7 is mostly driven by the villages in the Pontus region, where the degree of persecutions was considerably higher than it was in other regions. A concern is that the proximity of Pontus region to former Armenian villages might confound the estimates. The results are robust to controlling for distance to former Armenian villages in a flexible parametric way. Taken together, the results indicate

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percent of the industrial manufacturers and craftsmen in 1912 (Sonyel, 1993, pp. 258—259).

[19]The information on the number of refugees in Greece by region of origin comes from the published results of 1928 Census of Greece: Statistique Général de la Grèce, *Résultats Statistiques du Recensement de la Population de la Grèce du 15-16 Mai 1928, Vol. 1*, Athens: Imprimerie Nationale, 1933.

that conflict between Christians and Muslims played a role in increased identification of Muslims with their in-group identity and are consistent with the rejection-identification model of Branscombe, Schmitt and Harvey (1999), which posits that an out-group threat strengthens identification with the in-group identity. In the case of Turkey, the perceived threat of Christians increased the identification of Muslims with their religion.

SECULARIZATION OF EDUCATION. I start investigating the link between religiosity and education outcomes by looking at the evolution of literacy rates from 1927 to 1945. I exploit the fact that the government replaced the Arabic script with the Latin alphabet in 1928 to isolate the educational attainment under the secular and nonsecular education systems. Literacy in 1927 means literacy in the Arabic script and captures the stock of educational attainment under the nonsecular education system in the Ottoman period, and literacy in 1945 means literacy in the Latin alphabet and captures the educational attainment under the secular education system in the Republican period. If the historical presence of Armenians has a negative impact on education through lower demand of pious Muslims for secular education, one would expect not to observe a difference in literacy rates in the Arabic Script in 1927 between districts with greater and lesser historical Armenian presence, but one would expect to observe a gap in literacy rates in the Latin alphabet in 1945.

Table 9 reports the results. Column 1 shows that the historical presence of Armenians does not have a statistically significant impact on the literacy rate in the Arabic script in 1927. However, column 2 shows that the Armenian share in 1914 has a statistically significant negative impact on the literacy rate in 1945. An increase of ten percentage points in the Armenian share in 1914 (≈ 0.96 SD) decreases the literacy rate in 1945 on average by 2.36 percentage points, which is equal to almost one-eighth of the mean literacy rate in 1945. A comparison of the IV estimates with the OLS estimates suggests that the OLS estimates are upward biased, consistent with self-selection of Armenians into localities with a more educated Muslim populace.

I further explore the timing of the emergence of the education gap between localities with greater and lesser historical Armenian presence using the 5 percent microdata samples of the 1985 and 1990 censuses, which provide information on respondents' birth year and province. Panels (a) and (b) of Figure 10 present, respectively, the literacy rate and primary school completion rate by five-year birth-cohort and quartile according to the Armenian share in 1914 at the province level. Given that the Qur'an schools were closed in 1924, the earliest cohort likely to be affected by the secularization reforms is the cohort born between 1915 and 1919. Figure 10 shows an educational gap between provinces with a higher and lower Armenian share in 1914 for the cohorts affected by the reforms, i.e., those born after 1915, whereas there is no gap for the

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unaffected cohorts.

To investigate parametrically the impact of the historical Armenian presence on education outcomes across cohorts, I estimate the following equation:

$$Y_{i,p} = \alpha + \beta ArmSh_{1914,p} + \theta (ArmSh_{1914,p} * Coh_i)' + \lambda Coh_i' + \gamma X_p' + \delta W_i' + \mu_r + \epsilon_{i,p} \quad (4)$$

where $Y_{i,p}$ stands for the education outcome of individual i born in province p, and $ArmSh_{1914,p}$ stands for the Armenian share in 1914 in province p. Coh_i is a vector of dummy variables that indicate the five-year period the individual is born in, and $ArmSh_{1914,p} * Coh_i$ is a vector of interaction terms between the Armenian share in 1914 and the cohort dummies. The estimated vector of θ shows the differential impact of the historical presence of Armenians for each cohort with respect to the excluded cohort. The sample is restricted to individuals born between 1895 and 1974, and individuals born between 1895 and 1899 are the excluded cohort. X_p, the vector of controls at the province level, includes all the controls included in the estimation equation (2). In addition to these covariates, I control for the number of primary schools normalized by the number of school-age children in 1927 at the province level. W_i, the vector of controls at the individual level, includes dummy variables indicating whether the individual is female and living in an urban area. μ_r stands for geographical-region fixed effects. Standard errors are clustered at the province level.

Panel (a) of Figure 11 presents the estimated vector of θ — point estimates and 95 percent confidence intervals — obtained from OLS (see Table B10 in Supplementary Appendix B for the results in table form). The Armenian share in 1914 has no differential impact on the likelihood of being literate and having completed primary school for the cohorts born before 1915, i.e., the unaffected cohorts, whereas it has a negative differential impact for the cohorts born after 1915, i.e., the affected cohorts. A concern about these estimates is the fact that older cohorts might be subject to selection issues due to selective mortality. It is likely that the mortality rate of educated people is lower than that of uneducated people, but the identified effects are meaningful as long as the selective mortality of educated people does not vary depending on the Armenian share in 1914.

Next, I explore the role of religiosity as an intermediate step between the historical presence of Armenians and education. I estimate the equation 4 by replacing the Armenian share in 1914 with the mean of the share of votes cast for Islamist parties from 1973 to 1991 at the province level. Panel (b) of Figure 11 presents the results, showing that the size and significance of the estimates are similar to those presented in Panel (a). Religiosity is negatively associated with education only for the cohorts affected by the secularization reform. However, the negative impact of religiosity (and that of the historical presence of Armenians) on education did not persist over time.

For the cohorts born in and after 1950, the differential negative impact gets smaller as time passes.

This reversal is likely to be related to the introduction of vocational religious schools in the 1950s. Figure 12 presents the change in the number of Imam-Preacher junior high schools and the number of their enrollees over time. The number of vocational religious schools and their enrollees started to increase in the mid-1960s, and that the number of schools substantially increased during the periods in which Islamist parties participated in coalition governments, i.e., 1973 to 1979 and 1995 to 1997. Two features of the vocational religious education system suggest that it serves to satisfy the need of pious Muslims for religious instruction. First, 65.8 percent of these schools were built with funds from private social and cultural associations; only 9.65 percent of religious vocational schools were constructed entirely with state funds (Yavuz, 2003, p. 127). Second, even though women cannot serve as preachers and religious functionaries, 41.1 percent of students enrolled in vocational religious junior high schools in the 1996—1997 school year were female.

Taken together, the results suggest that the historical presence of Armenians has a negative impact on education through its positive impact on religiosity. A deeper attachment of Muslims to their in-group identity, Islam, as a result of their coexistence with Armenians, translated itself into lower demand for education after the secularization of education in the 1920s. Pious Muslims opted out of the secular education system in order to transmit their religious traits to their offspring, consistent with a model of intergenerational cultural transmission models in which parents socialize and transmit their preferences to their offspring, motivated by imperfect empathy which biases parents toward their own cultural traits (Bisin and Verdier, 2000, 2001).

5.2 Alternative Mechanisms

5.2.1 Persistent Shock to the Local Population Size

An alternative mechanism is that the deportation of Armenians affects long-run development through its persistent impact on the size of the local population. A persistent fall in the population size might divert both public and private investments in favor of other regions where such investments would be more cost-effective. Table 10 presents the impact of deportations on population growth from 1914 to 1955. Dependent variables are the population growth rates between 1914 and the census years in consideration, namely 1927, 1935, 1940, 1945, 1950, and 1955. I collapse population data at the administrative level of 1914 and report heteroskedasticity-robust standard errors. OLS estimates in Panel B show a statistically significant negative correlation between population growth and the historical presence of Armenians, and that the size

of the correlation is rather stable over time. IV estimates in Panel A show that the deportation of Armenians has a negative impact on population growth. However, the impact is statistically significant only until 1940, and its size attenuates over time and dropping to zero by 1955.

Table B11 in Supplementary Appendix B presents the relationship between the historical Armenian presence and fertility. Columns 1 and 2 , respectively, show the impact of the Armenian share in 1914 on median age and a proxy of fertility, namely the number of children aged 0 to 9 per 100 women aged 15 to 44, at the province level in 1945. The Armenian share in 1914 has a statistically significant negative impact on median age and a statistically significant positive impact on fertility. An increase of ten percentage points in the Armenian share in 1914 reduces the median age by 1.33 years and increases the number of children aged 0 to 9 per 100 reproductive women by 11.25 on average. Also, using the TDHS 2008 ever-married sample in columns 3 and 4, I find that women living in a province with a greater historical presence of Armenians give birth more and have more living children on average, compared to women living in other provinces. An increase of ten percentage points in the Armenian share in 1914 ($\approx$ 1.19 SD in this sample) increases the likelihood of giving one more birth and having one more living child, respectively, by 22 percent and 20 percent on average. Moreover, Figure B11 in Supplementary Appendix B shows a statistically significant positive relationship between a woman's religiosity and her fertility level. Taken together, the results suggest that the shock on the local population size due to the deportation of Armenians did not persist over time. The catch-up in population growth across localities with greater and lesser historical Armenian presence can be partly explained by the higher fertility in localities with a greater historical Armenian presence.

5.2.2 MIGRATION

Immigration of the Turkish-Muslim population into the former Armenian localities might partly explain why the shock on the size of local populations did not persist over time. The wartime government settled refugees expelled from Macedonia and western Thrace after the Balkan Wars and those expelled from Caucasus during WWI into the localities where Armenians lived before the deportations (Dündar, 2008, pp. 289—296). A large inflow of deprived war refugees or migrants into former Armenian localities might explain the emergence of the gap in development levels between districts with higher and lower Armenian shares in 1914. Moreover, the migrants who replaced Armenians might be more religious than the local population since they were expelled and persecuted because of their religion.

Column 3 of Table 9 presents the impact of the Armenian share in 1914 on migration

in 1945. Data on migration come from the published results of the 1945 census. A migrant is defined as a person who lives in a province other than her province of birth. Information on migration is available at the province level; there are 59 provinces in the sample. Heteroskedasticity-robust standard errors are reported. The OLS estimate in Panel B shows a statistically significant positive correlation between the historical presence of Armenians and the share of migrants in 1945. The IV estimate in Panel A shows that the impact of the historical presence of Armenians on migrant share in 1945 is positive, but not statistically different from zero (p-value = 0.295). An increase of ten percentage points in the Armenian share in 1914 ($\approx$ 1.11 SD in this sample) increases the migrant share in 1945 by 2.06 percentage points on average, although this impact is not precisely estimated.

I conduct a counterfactual exercise to show that the impact of the historical presence of Armenians on migration is too small in size to explain the gap in literacy rates in 1945 between districts with higher and lower Armenian shares in 1914. If the baseline results were driven entirely by migration, we would expect not to find that the historical presence of Armenians has a negative impact on the literacy rate of local population in 1945. I decompose the literacy rate in 1945 and write:

$$Literacy_{1945} = Literacy_{1945,loc} * ShPop_{1945,loc} + Literacy_{1945,mig} * ShPop_{1945,mig} \quad (5)$$

where $ShPop_{1945,local} + ShPop_{1945,migrant} = 1$. I make the most conservative assumption that all the migrants who replaced Armenians were illiterate, i.e., $Literacy_{1945,mig} = 0$. This assumption drops the second term in the right-hand side of the equation, and the decomposition equation can now be written as $Literacy_{1945} = Literacy_{1945,loc} * (1 - ShPop_{1945,mig})$. I multiply the Armenian share in 1914 by 0.206, the coefficient obtained in Column 3 of Table 9 (Panel A) by regressing the share of migrants on the Armenian share in 1914, to calculate the share of migrants who replaced Armenians.[20] Then, I impute the literacy rate of the local population.

Next, I investigate the impact of the historical presence of Armenians on the imputed literacy rate of the local population. Column 4 of Table 9 shows that the share of Armenians in 1914 has a statistically significant negative impact on the imputed literacy rate of the local population in 1945. Even though the estimate is less precise, its size (—0.217) is very close to the one in Column 2 (—0.236) obtained in section 5.1. Moreover, Figure B12 in Supplementary Appendix B shows that the correlation between the migrant share in 1945 and literacy in 1945 is positive, conditional on the

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[20]The point estimate 0.206 is the impact of the historical presence of Armenians on the share of migrants in 1945 *at the province level*. I use this coefficient to calculate the share of migrants who replaced Armenians *at the district level*. The assumption I make here is that there is no within-province migration and that the share of migrants within a given province is the same across all the districts of that province.

covariates. These results suggest that migration cannot account for the gap in literacy rate in 1945 between districts with higher and lower Armenian shares in 1914.

Table B12 in Supplementary Appendix B investigates the impact of migration on religiosity using the TDHS 2008 data. Panel A reports the OLS estimates using baseline controls, and Panel B reports the OLS estimates using additional controls related to religiosity, discussed in section 4.3, in addition to baseline controls. I create two dummy variables that indicate the migration status. The first of them takes the value of 1 if a person lives in a province other than her province of birth, and 0 otherwise. The second one takes the value of 1 if a person lives in a province other than her province of childhood, i.e. her main province of residence until age 12. Column 1 replicates the baseline OLS estimate from Table 4. Columns 2 and 4 show that the Armenian share in 1914 is positively correlated with the likelihood of being a migrant, irrespective of the definition of a migrant. An increase of ten percentage points in Armenian share in 1914 increases the likelihood of being a migrant by about 4 to 5 percentage points. In columns 3 and 5, I interact migrant status with the Armenian share in 1914 to investigate whether those who migrated into provinces with a higher Armenian share in 1914 are more religious than the local population. The results in both Panels A and B show that migrants in provinces with a greater historical Armenian presence are not statistically significantly different than the local population in terms of religiosity. Overall, the results suggest that migration is unlikely to be a mechanism in play.

5.2.3 Land Inequality

The historical presence of Armenians might affect education and poverty through its persistent impact on land inequality. Even though the postwar Ottoman government passed a law that enabled the restitution of Armenian properties, only 10 percent of Armenian deportees claimed restitution of their properties (Akçam and Kurt, 2012, p. 92). If the government did not distribute equally the abandoned Armenian wealth to the migrants who replaced Armenians, or if the local elite captured it, local inequality would have increased due to the deportations. Column 5 of Table 9 presents the impact of the historical presence of Armenians on contemporary land inequality. The OLS estimate in Panel B shows a statistically significant positive correlation between the Armenian share in 1914 and land inequality in 1997. However, this relationship is not statistically significant in the IV estimate in Panel A. Therefore, we cannot conclude that the historical presence of Armenians increases land inequality today. Moreover, Figure B13 in Supplementary Appendix B shows that the correlation between land gini in 1997 and the primary school completion rate in 2000 is positive, conditional on the covariates. Overall, the results suggest that land inequality is not likely to be a mechanism.

6 ROBUSTNESS

In this section, I investigate the robustness of the main results. Panel A of Table 11 presents the IV estimates for the share of votes cast for Islamist parties from 1973 to 1995, Panel B for the composite religiosity index, Panel C for the primary school graduation rate in 1985, and Panel D for the poverty rate in 2011. Column 1 replicates the baseline IV estimates. I start exploring the robustness of the results by using the data on the Armenian population provided by the Armenian Patriarchate's census of 1913—14 (Kévorkian, 2011, pp. 272—78) instead of the official Ottoman data of 1914, since there is a substantial discrepancy between the figures provided by these two sources. According to estimates of the Armenian Patriarchate, the number of Armenians living in the Ottoman Empire was 1,914,620, whereas the official Ottoman data put that number at 1,112,614. However, Ottoman authorities acknowledged that their estimates were likely to suffer from undercounting by about 30 percent and the true figure has to be around 1,500,000 (Sarafian, 2011, p. 20). Column 2 shows that employing the Armenian Patriarchate's figures does not alter the results qualitatively; however, the point estimates go down slightly.

In columns 3 through 5, I check the robustness of the results to control for alternative historical and political determinants. Russian occupation during WWI and occupation by the Allied Powers after WWI might affect contemporary outcomes through provoking reactionary sentiments among the local population, or causing improvements or deteriorations in local infrastracture. If the Russian or Allied Forces occupation had such impacts that persisted over time, the effect of these occupations would confound that of the historical presence of Armenians. To address these concerns, I construct a dummy variable that takes the value of 1 if the district was under Russian occupation for at least six months during WWI and another dummy variables indicating whether the district was occupied by the Allies for at least six months after WWI.[21] Columns 3 and 4 show the results conditional on whether the district was occupied by, respectively, the Russians during WWI and the Allies after WWI. The results remain unaltered. Another potential concern is that the conflict between the Turkish state and Kurdish insurgents might confound the baseline results. In order to address this concern, in column 5, I control for a dummy variable indicating whether the district was a part of the OHAL region (*Olağan Üstü Hal Valiliği*), which was created in 1987, and then abolished in 2002, to deal with the developing Turkish-Kurdish conflict; it covered provinces with intense terrorist activities in eastern Turkey. The results remain similar.

Column 6 includes additional geographical controls, namely mean annual tempera-

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[21]Information on the districts occupied by the Russians comes from Erickson (2001, pp. 95—109, 120—137).

ture and precipitation. Inclusion of these climatic controls does not affect the estimates either. Lastly, in column 7, I control for 20 geographical-subregion fixed effects instead of seven geographical-region fixed effects. The point estimates for the composite religiosity index and the poverty rate in 2011 go down by half, but they remain statistically significant at conventional levels. Overall, the results are robust.

7 CONCLUSION

In this paper, I study the impact of the historical Armenian presence on long-term socioeconomic and political development in Turkey. I find that current residents of localities with a greater historical Armenian presence voted more for Islamist parties from 1973 to 2011 and are more likely to regularly perform religious activities than the residents of other localities do. I also find that the residents of districts with a greater historical Armenian presence are less literate, less likely to complete primary school, and are poorer today compared to residents of other districts. These effects are related to the former presence of Armenians and are not due to the economic shocks created by the deportation of Armenians or to the inflow of immigrants into the former Armenian localities. The coexistence of Armenians and Muslims in close proximity led to polarization, and the perceived threat of Armenians increased the identification of Muslims with their in-group identity, Islam, since religion set the boundaries of communal life and group identity in the Ottoman Empire. When faced with a trade-off between transmitting their religious cultural traits to their offspring and educating them within the secular education system, Muslims, who became more attached to their religion as a result of their coexistence with a rival non-Muslim group, opted out of secular education.

Broader implications emerge from this analysis. Coexistence of different religious and ethnic groups might have a long-run impact on the socioeconomic and political development of a society long after the coexistence ends, through its impact on local culture and its interaction with formal institutions. As shown in this study, the presence of a rival out-group might strengthen group members' identification with the in-group identity. A social identity, e.g., religious identity and ethnic identity, affects political and socioeconomic decisions of individuals, not only because it provides an individual with a set of beliefs and attitudes, but also because the self-evaluation of a group member depends on his or her conformity with these beliefs and attitudes. Informal institutions, such as cultural norms and attitudes, play an important role in socioeconomic and political development, because they affect the design, implementation, and effectiveness of social policies.

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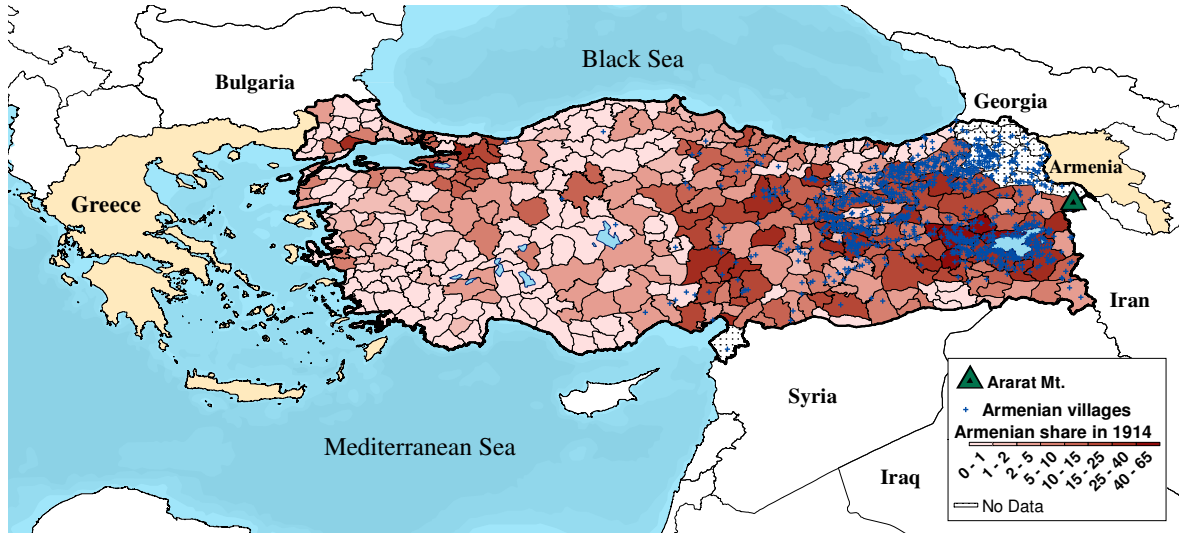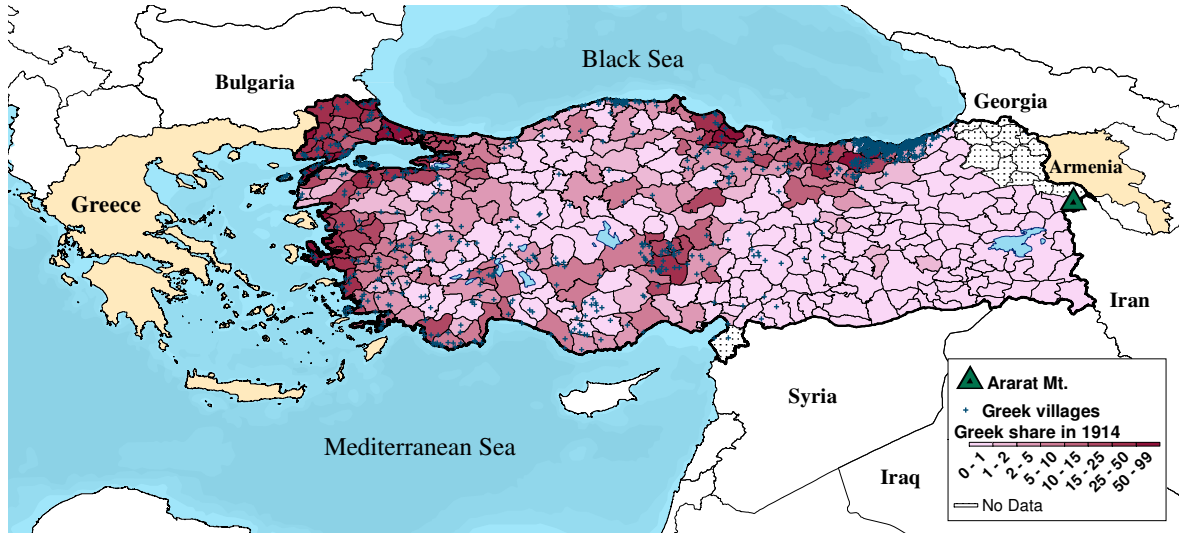
(a) Distribution of Armenians in 1914
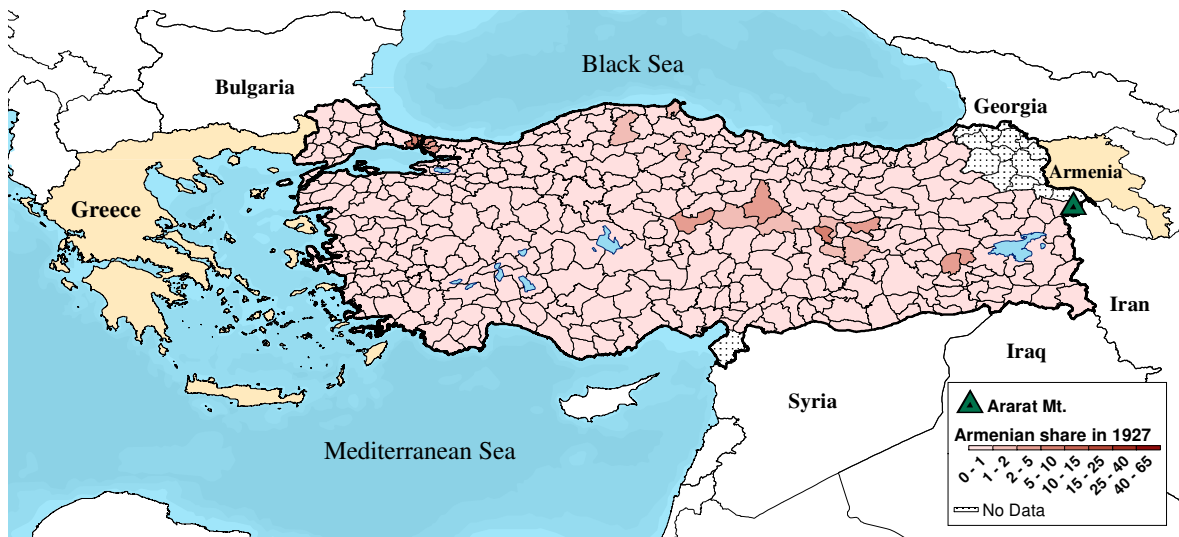
(b) Distribution of Armenians in 1927

Figure 1: Spatial Distribution of Armenians

Notes: An "Armenian" is defined as a person who was affiliated with the Armenian Apostolic Church or the Armenian Catholic Church in 1914, and as a person who reported Armenian as his or her native language in 1927. An Armenian village is a village whose old name's linguistic origin is identified as Armenian by Nişanyan (2010). Data sources: Karpat (1985) for the 1914 population, official published census results for the 1927 population, and Nişanyan (2010) for Armenian villages. The map approximates 1935 administrative borders.

(a) Distribution of Greeks in 1914

(b) Distribution of Greeks in 1927

Figure 2: SPATIAL DISTRIBUTION OF GREEKS

Notes: A "Greek" is defined as a person who was affiliated with the Greek Orthodox Church or the Greek Catholic Church in 1914, and as a person who reported Greek as his or her native language in 1927. A Greek village is a village whose old name's linguistic origin is identified as Greek by Nişanyan (2010). Data sources: Karpat (1985) for the 1914 population, official published census results for the 1927 population, and Nişanyan (2010) for Greek villages. The map approximates 1935 administrative borders.
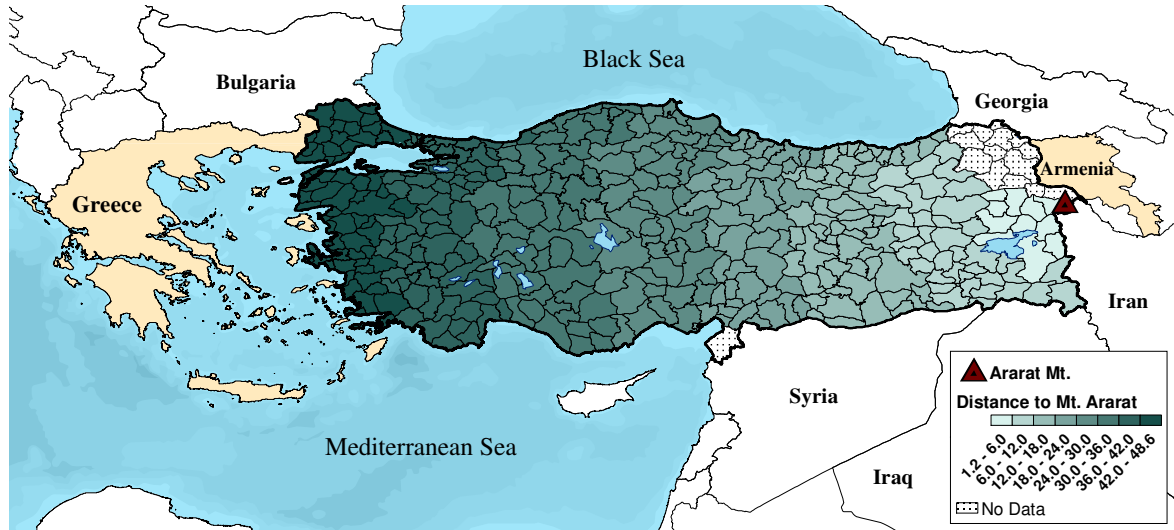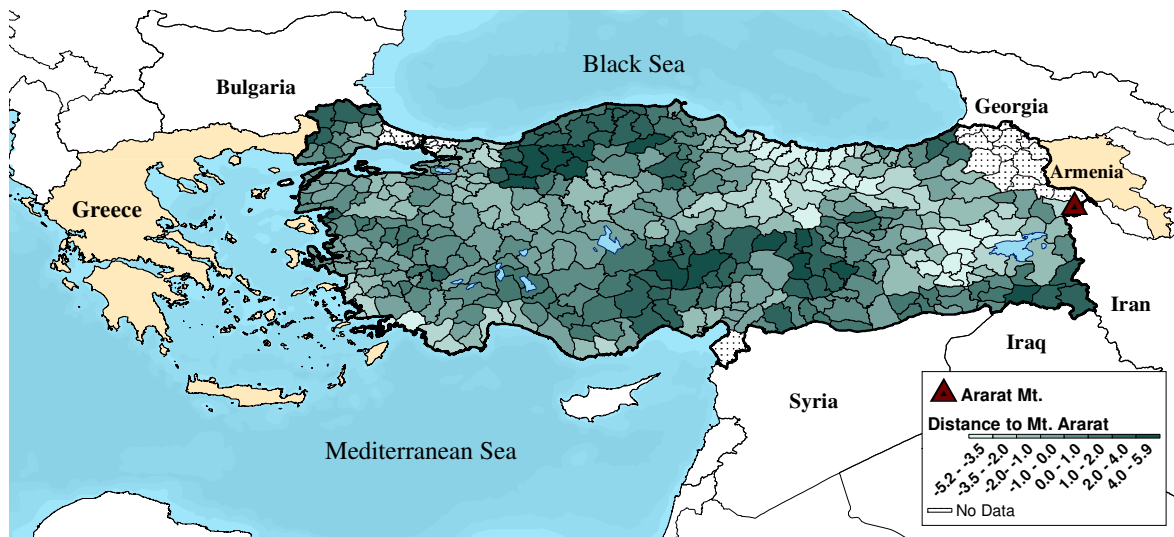
(a) Raw measure

(b) Residual conditional on the full set of covariates

Figure 3: Travel distance to Mt. Ararat

Notes: Distance is shown in travel days. One day of travel is equal to 30 kilometers on average. Travel cost depends on topography and is calculated using the cost distance tool of ArcGIS® software. Residuals in Panel (b) are obtained from regressing travel distance to Mt. Ararat on covariates. Covariates include geographical-region fixed effects, the Greek population share in 1914, the imputed Kurdish population share in 1914, the imputed Arabic population share in 1914, travel distance to Istanbul, travel distance to the eastern border, travel distance to the coast, a dummy variable indicating whether the district was the central district of the province in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean altitude and latitude of the district, and mean suitability indices for wheat, olive, and cotton production. The map approximates 1935 administrative borders.

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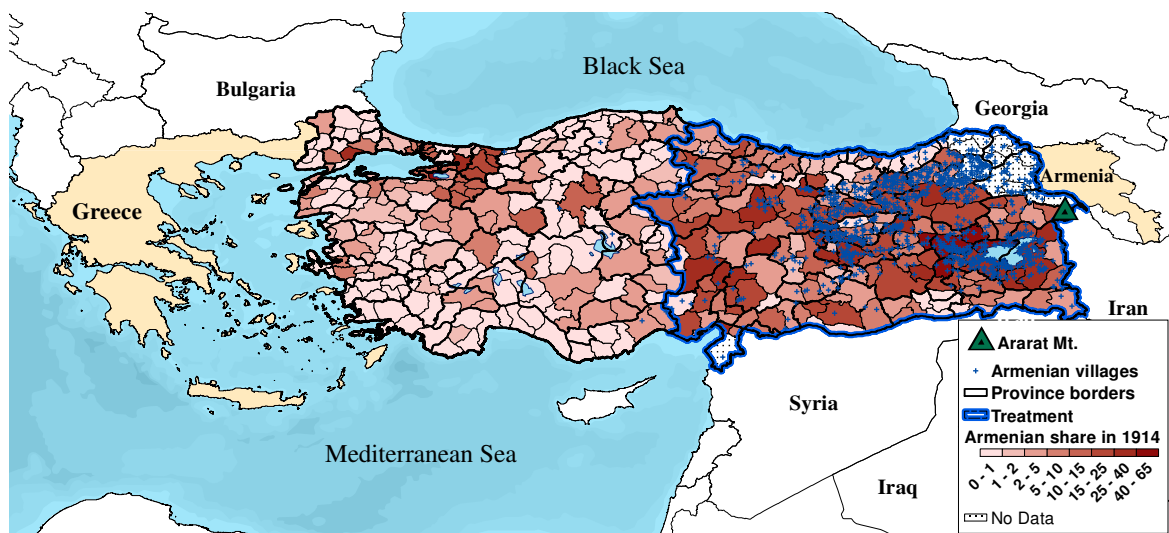
(a) Treatment sample
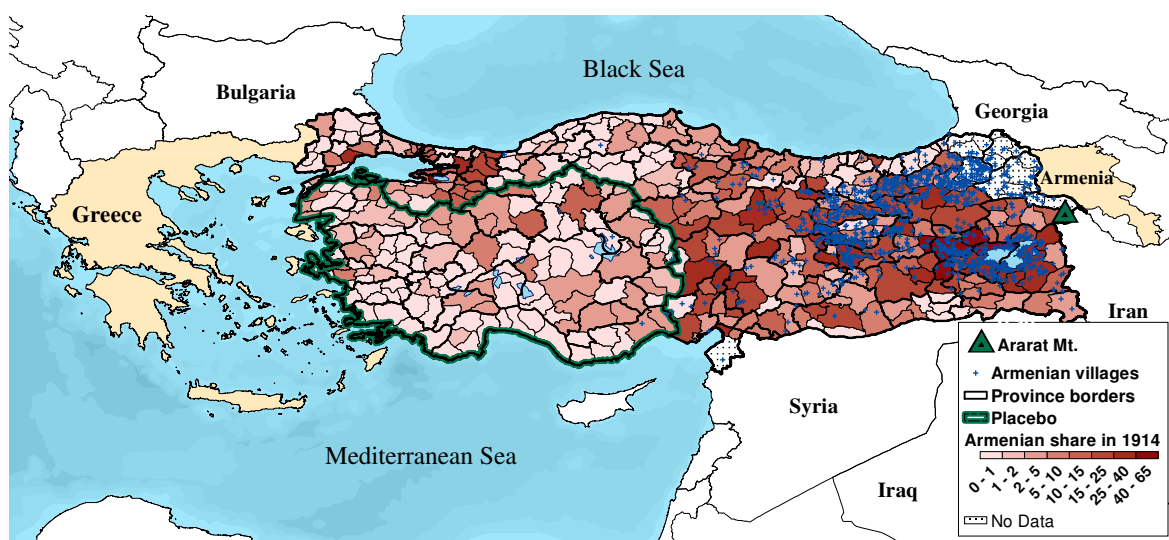
(b) Placebo sample

Figure 4: TREATMENT AND PLACEBO SAMPLES

Notes: An "Armenian" is defined as a person who was affiliated with the Armenian Apostolic Church or the Armenian Catholic Church in 1914. An Armenian village is a village whose old name's linguistic origin is identified as Armenian by Nişanyan (2010). Data sources: Karpat (1985) for the 1914 population, and Nişanyan (2010) for Armenian villages. The map approximates 1935 administrative borders.
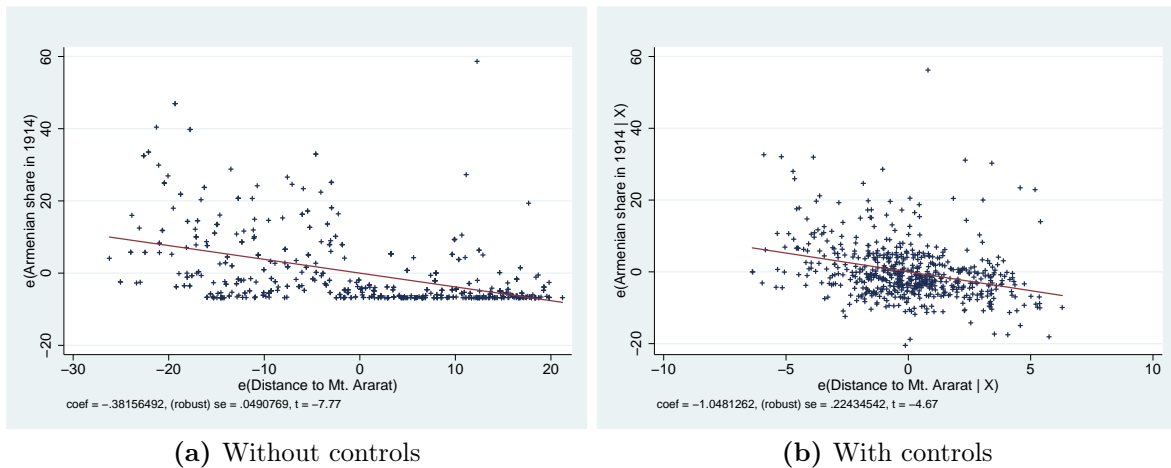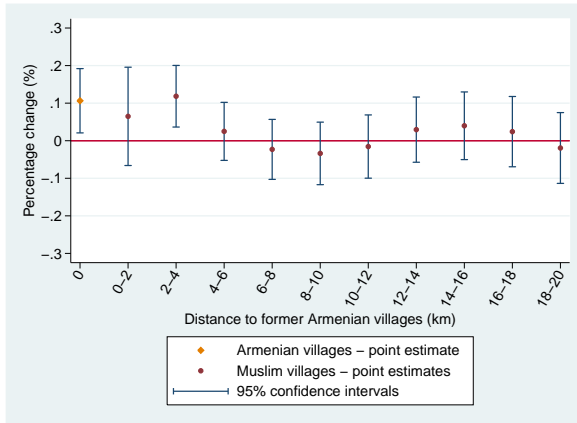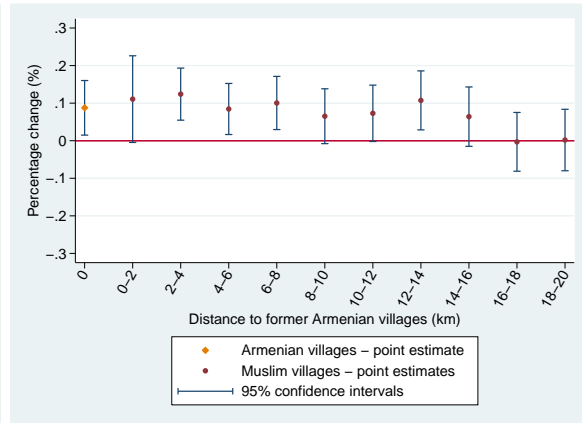
(a) Without controls **(b)** With controls

Figure 5: Correlation Between Armenian Share in 1914 and
Travel Distance to Mt. Ararat

Notes: Panel (a) presents the raw correlation between the Armenian population share in 1914 and travel distance to Mt. Ararat. Panel (b) presents partial regression plots from OLS estimates. The horizontal axis represents residuals from regressing the instrumental variable on covariates. The vertical axis represents residuals from regressing the Armenian population share in 1914 on covariates. Covariates include geographical-region fixed effects, the Greek population share in 1914, the imputed Kurdish population share in 1914, the imputed Arabic population share in 1914, travel distance to Istanbul, travel distance to the eastern border, travel distance to the coast, a dummy variable indicating whether the district was the central district of the province in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean altitude and latitude of the district, and mean suitability indices for wheat, olive, and cotton production.

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(a) Share of votes for Islamist parties in 1991

(b) Share of votes for Islamist parties in 1995

(c) Share of votes for Islamist parties in 1999

(d) Share of votes for Islamist parties in 2002

(e) Share of votes for Islamist parties in 2007

(f) Share of votes for Islamist parties in 2011

Figure 6: POLITICAL OUTCOMES FOR ARMENIAN VILLAGES:
FLEXIBLE PARAMETRIC VILLAGE-LEVEL ANALYSIS

Notes: Point estimates and confidence intervals at 95% from OLS estimates. Muslim villages that are within 20 to 25 kilometers of former Armenian villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The sample is restricted to the treatment sample shown in Figure 4. The horizontal axis represents distance to former Armenian villages. The vertical axis represents share of votes for Islamist parties normalized by the sample mean in the given election year. Controls include province fixed effects, elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and natural log of number of registered voters in the given election year.
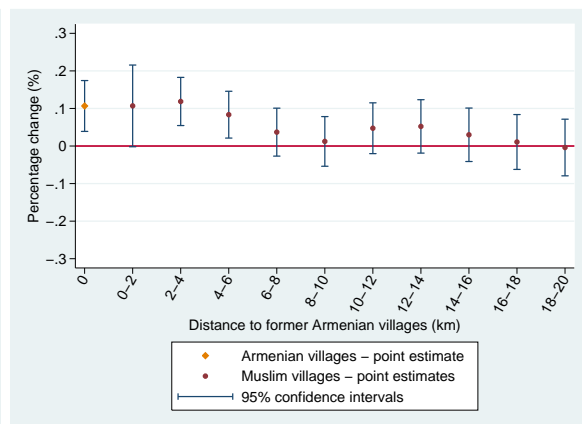
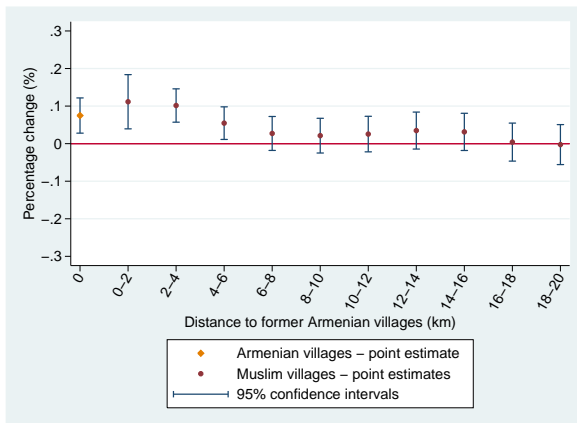**(a)** Share of votes for Islamist parties in 1991
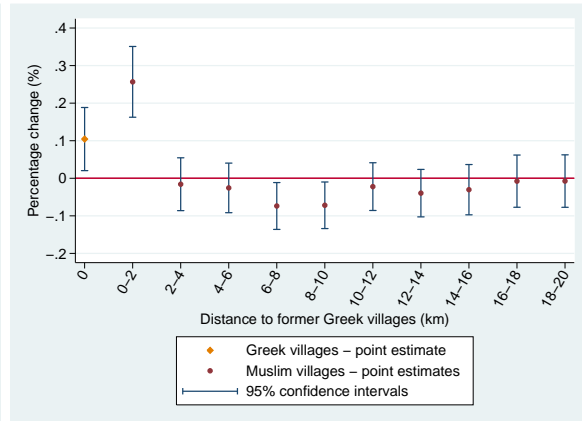
(b) Share of votes for Islamist parties in 1995
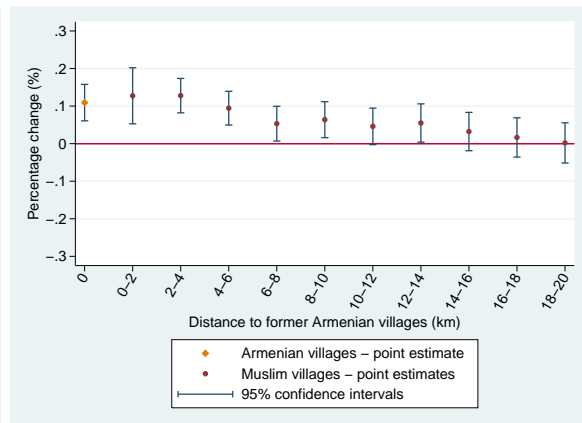
(c) Share of votes for Islamist parties in 1999
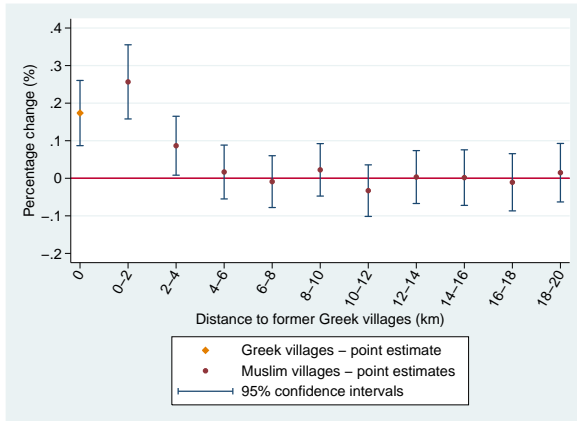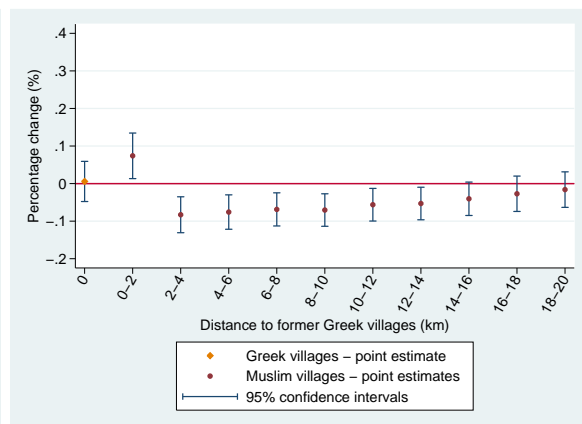
(d) Share of votes for Islamist parties in 2002

(e) Share of votes for Islamist parties in 2007

(f) Share of votes for Islamist parties in 2011

Figure 7: POLITICAL OUTCOMES FOR GREEK VILLAGES:
FLEXIBLE PARAMETRIC VILLAGE-LEVEL ANALYSIS

Notes: Point estimates and confidence intervals at 95% from OLS estimates. Muslim villages that are within 20 to 25 kilometers of former Greek villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The sample is restricted to region of Greek settlements shown in Figure 8. The horizontal axis represents distance to former Greek villages. The vertical axis represents share of votes for Islamist parties normalized by the sample mean in the given election year. Controls include province fixed effects, elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and natural log of number of registered voters in the given election year.
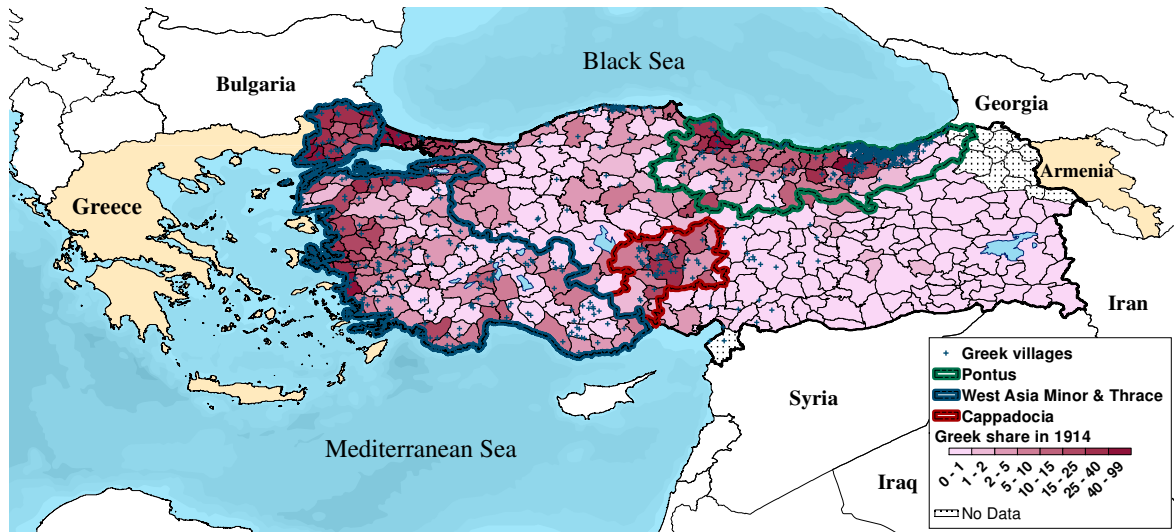
Figure 8: REGIONS OF GREEK SETTLEMENT IN TURKEY

Notes: A "Greek" is defined as a person who was affiliated with the Greek Orthodox Church or the Greek Catholic Church in 1914. A Greek village is a village whose old name's linguistic origin is identified as Greek by Nişanyan (2010). Data sources: Karpat (1985) for the 1914 population and Nişanyan (2010) for Greek villages. The map approximates 1935 administrative borders.
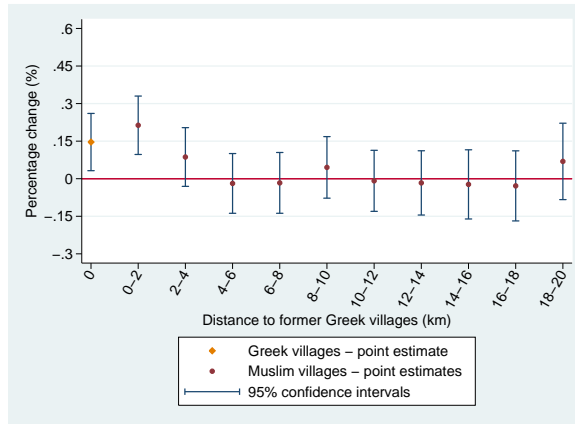
(a) Pontus
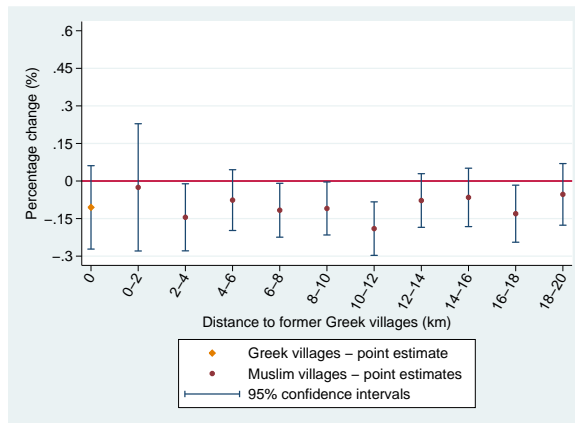
(b) Western Asia Minor and Thrace
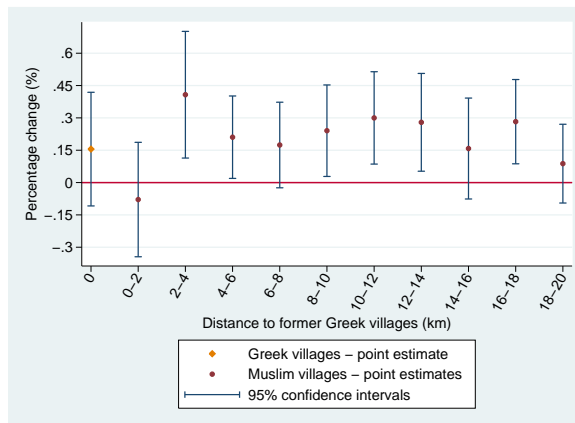
(c) Cappadocia

Figure 9: GREEK VILLAGES BY REGION:
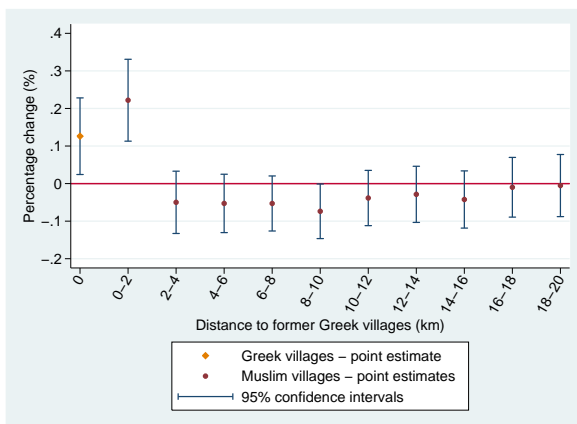SHARE OF VOTES FOR ISLAMIST PARTIES IN 2011

Notes: Point estimates and confidence intervals at 95% from OLS estimates. Muslim villages that are within 20 to 25 kilometers of former Greek villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The horizontal axis represents distance to former Greek villages. The vertical axis represents share of votes for Islamist parties normalized by the sample mean in 2011. Controls include province fixed effects, elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and natural log of number of registered voters in the given election year.
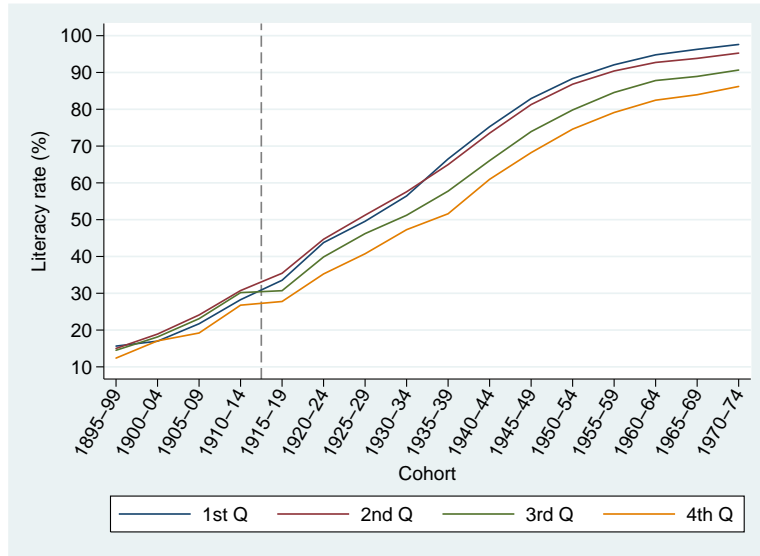
(a) Literacy rate
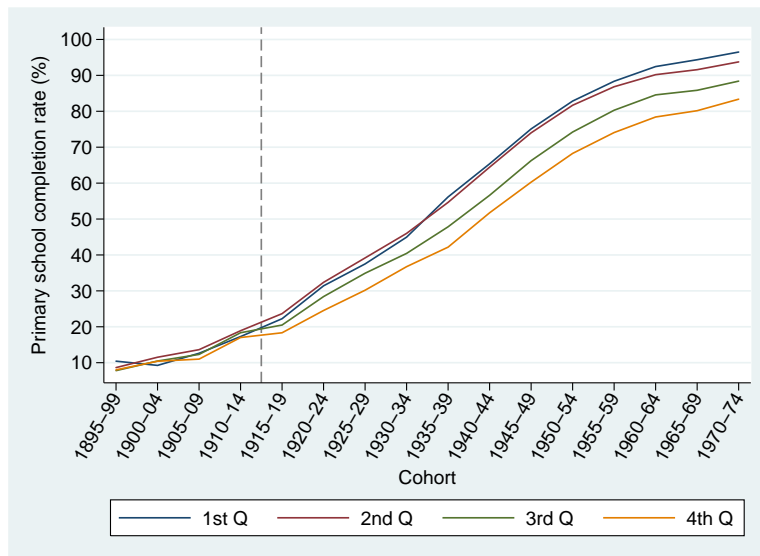
(b) Primary school completion rate

Figure 10: Education Trend by Cohort and Quartile

Notes: Data source: 5 percent microdata sample of the 1985 and 1990 censuses. Quartiles are calculated according to the Armenian population share in 1914 at the province level. The vertical line represents the cutoff point between the cohorts that are affected and not affected by the secularization of education.
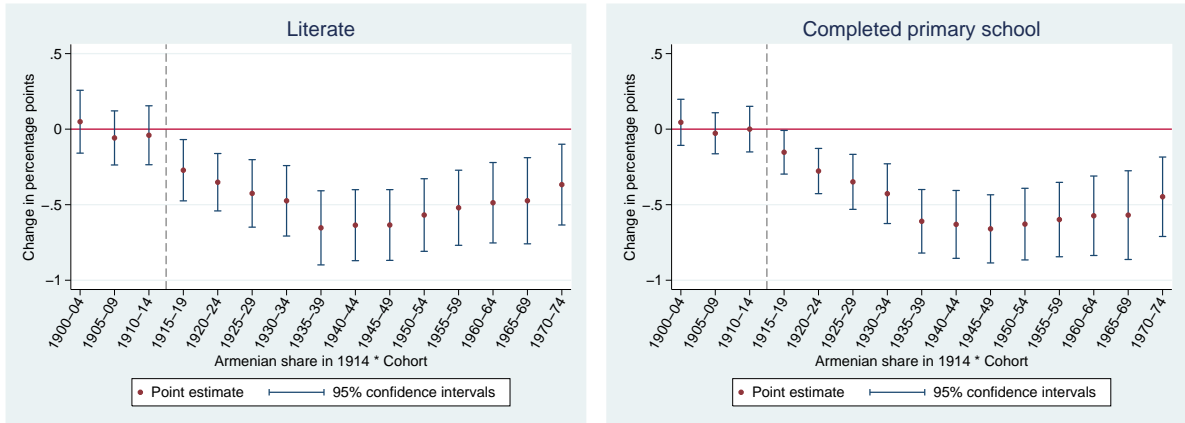
(a) Interaction term between Armenian share in 1914 and five-year cohort dummies
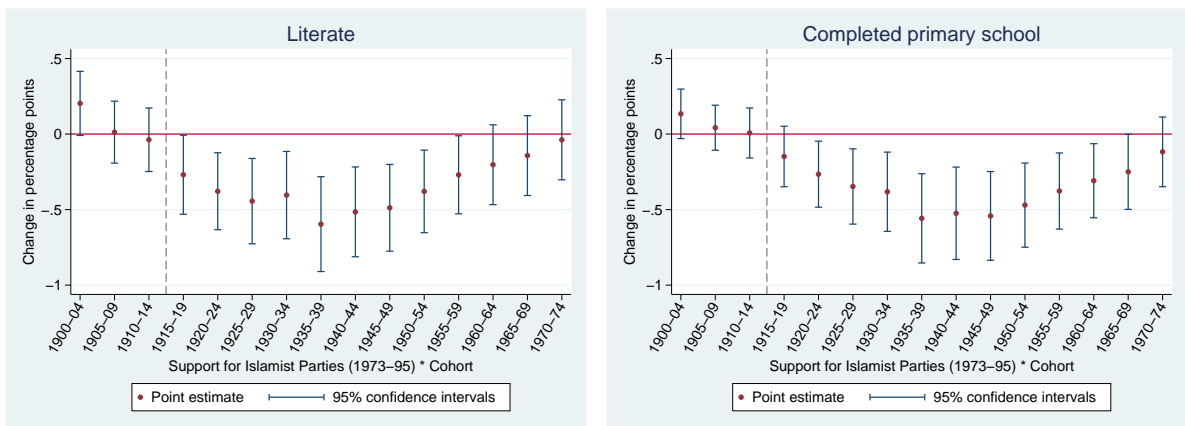
(b) Interaction term between support for Islamist parties from 1973 to 1995 and five-year cohort dummies

Figure 11: EDUCATION OUTCOMES: HETEROGENOUS IMPACT BY COHORT

Notes: Point estimates and confidence intervals at 95% from OLS estimates. Data source: 5 percent microdata sample of the 1985 and 1990 censuses. The variation in the Armenian population share in 1914 is at the province-of-birth level. Standard errors are clustered at the province-of-birth level. The vertical axis represents being literate or having completed primary school. The horizontal axis represents cohorts. The vertical line represents the cutoff point between the cohorts that are affected and not affected by the secularization of education. Covariates at the province level include geographical-region fixed effects, the Greek population share in 1914, the imputed Kurdish population share in 1914, the imputed Arabic population share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of districts in the province that had access to the railway network in 1914, share of districts in the province that were within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Covariates at the individual level include dummy variables indicating whether the respondent is female and living in an urban area.
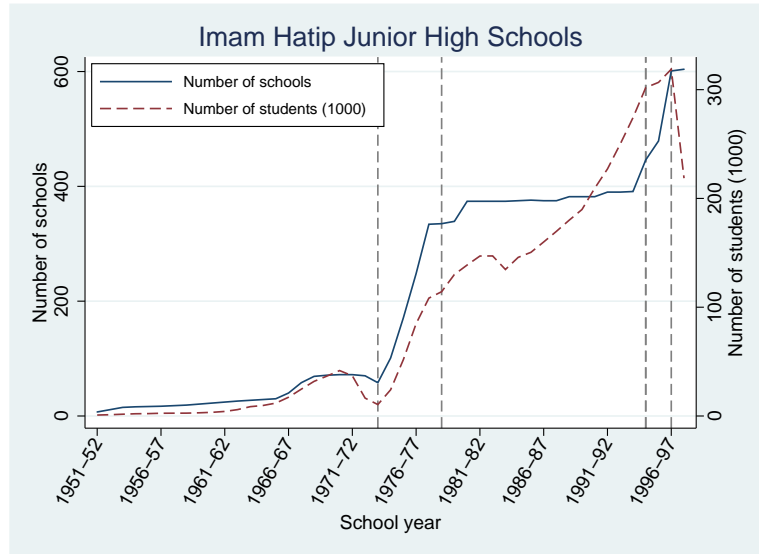
Figure 12: Imam Hatip Junior High Schools

Notes: Data source: Yavuz (2003, p. 124). The vertical lines represent the periods in which Islamist parties participated in the coalition government.

Table 1: DESCRIPTIVE STATISTICS: MEAN COMPARISON

	Armenian share in 1914			
	Above median	Below median	Diff.	
Panel A: Historical Population Data				
Total population in 1914	50,563	39,169	-11,394	***
Armenian share in 1914 (%)	13.22	0.39	-12.83	***
Greek share in 1914 (%)	5.38	11.25	5.87	***
Jewish share in 1914 (%)	0.44	0.27	-0.17	
Muslim share in 1914 (%)	79.25	87.39	8.14	***
Total population in 1927	40,645	34,197	-6,448	**
Armenian share in 1927 (%)	0.28	0.02	-0.26	***
Greek share in 1927 (%)	0.12	0.22	0.09	
Jewish share in 1927 (%)	0.24	0.09	-0.15	*
Muslim share in 1927 (%)	99.04	99.67	0.63	***
- Kurdish share in 1927 (%)	26.24	5.31	-20.94	***
- Arabic share in 1927 (%)	1.62	0.98	-0.64	
- Turkish share in 1927 (%)	69.36	92.10	22.74	***
Total population in 1935	48,773	40,111	-8,662	**
Total population in 1940	53,335	43,337	-9,998	**
Total population in 1945	56,839	44,978	-11,861	***
Total population in 1950	64,217	49,148	-15,069	***
Panel B: Geographical and Historical Controls				
Population density in 1914	25.63	28.13	2.50	
Province center in 1914	0.30	0.07	-0.23	***
Within one and a half days distance from the ports	0.05	0.02	-0.03	
District had access to railways in 1914	0.21	0.23	0.03	
Travel distance to Mount Ararat (days)	21.20	33.61	12.41	***
Travel distance to Constantinople (days)	12.37	7.51	-4.86	***
Travel distance to the coast (days)	6.26	3.13	-3.13	***
Travel distance to the Eastern border (days)	9.41	16.36	6.95	***
Rivers' length (km/100 sq-km)	1.08	0.62	-0.47	***
Streams' length (km/100 sq-km)	1.12	1.25	0.13	
Latitude (decimal degrees)	39.14	39.16	0.02	
Altitude (m)	1,167.12	811.58	-355.54	***
Suitability index for wheat	34.46	34.14	-0.32	
Suitability index for cotton	6.41	7.16	0.75	
Suitability index for olive	9.15	15.51	6.36	***
Mean annual temperature (°C)	10.47	11.86	1.39	***
Mean annual precipitation (mm)	579.69	653.63	73.94	***
Observations	168	167	335	

Notes: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table 2: First Stage (1985 sample)

DEPENDENT VARIABLE						
Armenian share in 1914	(1)	(2)	(3)	(4)	(5)	(6)
Distance to Mt. Ararat	-0.382***	-0.475***	-0.567***	-0.541***	-0.771***	-1.048***
	(0.05)	(0.09)	(0.09)	(0.09)	(0.16)	(0.22)
Geographical region FE		✓	✓	✓	✓	✓
Other population shares			✓	✓	✓	✓
Historical development				✓	✓	✓
Distance measures					✓	✓
Geoographical endowments						✓
Observations	594	594	594	594	594	594
R-squared	0.214	0.307	0.369	0.392	0.420	0.438
F-stat	60.45	29.77	38.85	34.51	24.18	21.83

Notes: Other population shares includes the Greek share in 1914, the imputed Kurdish share in 1914, and the imputed Arabic share in 1914. Distance measures include travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border. Historical development measures include a dummy variable indicating whether the district was the province center in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half days of the major nineteenth-century ports. Geographical endowment measures include length of rivers and streams normalized by surface area of district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation.

Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: CONTEMPORARY POLITICAL OUTCOMES:
VOTE SHARES OF ISLAMIST POLITICAL PARTIES (1973—2011)

DEPENDENT VARIABLE	(1) Islamist vote share 1973-1995	(2) Islamist vote share 1999-2011	(3) Islamist vote share in 1973	(4) Islamist vote share in 1977	(5) Islamist vote share in 1991	(6) Islamist vote share in 1995
Panel A: IV						
Armenian share in 1914	0.431***	0.175	0.274	0.428***	0.465**	0.440**
	(0.154)	(0.243)	(0.181)	(0.150)	(0.182)	(0.209)
Observations	2,348	2,348	587	587	833	848
F-stat	22.13	22.13	21.44	21.44	23.49	23.54
Panel B: OLS						
Armenian share in 1914	0.159***	0.0800	0.0750	0.177**	0.152***	0.193***
	(0.056)	(0.073)	(0.073)	(0.070)	(0.057)	(0.070)
Observations	2,348	2,348	587	587	833	848
R-squared	0.275	0.164	0.280	0.395	0.444	0.375
Panel C: Reduced Form						
Distance to Mt. Ararat	-0.451***	-0.183	-0.287	-0.449***	-0.485***	-0.460**
	(0.157)	(0.254)	(0.192)	(0.165)	(0.179)	(0.220)
Observations	2,348	2,348	587	587	833	848
R-squared	0.272	0.164	0.281	0.383	0.444	0.369
Mean of dependent var.	14.86	38.31	11.97	9.293	17.92	21.81
S.D. of dependent var.	11.53	21.13	9.708	8.674	11.58	12.98

Notes: Controls include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, a dummy variable indicating whether the district was the province center in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4: RELIGIOSITY OUTCOMES: PERFORMING NAMAZ AND FASTING
(TDHS 2008)

DEPENDENT VARIABLE	(1) Religiosity index	(2) Performs *namaz* regularly	(3) Fasts regularly	(4) Performs *namaz* at all	(5) Fasts at all
Panel A: IV					
Armenian share in 1914	0.0252**	0.9512**	0.5550**	0.5839**	0.2937*
	(0.0107)	(0.4827)	(0.2276)	(0.2560)	(0.1551)
Observations	6,559	6,559	6,559	6,559	6,559
F-stat	17.91	17.91	17.91	17.91	17.91
Panel B: OLS					
Armenian share in 1914	0.00380	0.110	0.109	0.144	0.00450
	(0.0036)	(0.1569)	(0.0840)	(0.1059)	(0.0570)
Observations	6,559	6,559	6,559	6,559	6,559
R-squared	0.106	0.115	0.0640	0.0830	0.0450
Panel C: Reduced Form					
Distance to Mt. Ararat	-0.0392***	-1.4792***	-0.8631***	-0.9080***	-0.4568**
	(0.0116)	(0.5204)	(0.2897)	(0.3135)	(0.1977)
Observations	6,559	6,559	6,559	6,559	6,559
R-squared	0.109	0.117	0.0660	0.0840	0.0460
Mean of dependent var.	2.675	51.50	89.25	80.76	94.48
S.D. of dependent var.	1.116	49.98	30.98	39.42	22.84

Notes: TDHS 2008 sample of ever-married women (age 15-49). The variation in the Armenian share in 1914 is at the province level. Controls at the individual level include age fixed effect and native language of the individual, and a dummy variable indicating whether she lives in an urban area. Controls at the province level include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of districts in the province that had access to the railway network in 1914, share of districts in the province that are within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, mean suitability indices for wheat, cotton, and olive cultivation. Residents of Istanbul, Hatay, Kars, and Artvin provinces are excluded from the sample. Standard errors are clustered at the province level; there are 77 clusters.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table 5: CONTEMPORARY DEVELOPMENT OUTCOMES: LITERACY AND PRIMARY SCHOOL COMPLETION RATES (1985—2000) AND POVERTY RATE (2011)

DEPENDENT VARIABLE	(1) Literacy rate in 1985	(2) Literacy rate in 1990	(3) Literacy rate in 2000	(4) Primary school comp. rate in 1985	(5) Primary school comp. rate in 1990	(6) Primary school comp. rate in 2000	(7) Poverty Poverty rate in 2011
Panel A: IV							
Armenian share in 1914	-0.331**	-0.272**	-0.215**	-0.384***	-0.344**	-0.437***	0.509***
	(0.130)	(0.121)	(0.093)	(0.135)	(0.136)	(0.136)	(0.159)
Observations	594	833	853	594	833	853	880
F-stat	21.83	23.49	23.87	21.83	23.49	23.87	24.17
Panel B: OLS							
Armenian share in 1914	-0.117***	-0.125***	-0.101***	-0.129***	-0.152***	-0.157***	0.220***
	(0.043)	(0.043)	(0.032)	(0.045)	(0.05)	(0.046)	(0.068)
Observations	594	833	853	594	833	853	880
R-squared	0.764	0.714	0.644	0.740	0.700	0.659	0.692
Panel C: Reduced Form							
Distance to Mt. Ararat	0.346**	0.284**	0.226**	0.403***	0.359**	0.459***	-0.535***
	(0.134)	(0.133)	(0.102)	(0.138)	(0.149)	(0.143)	(0.170)
Observations	594	833	853	594	833	853	880
R-squared	0.763	0.710	0.640	0.739	0.696	0.656	0.686
Mean of dependent var.	72.73	75.65	83.67	53.43	59.06	61.33	17.47
S.D. of dependent var.	12.31	11.48	8.370	13.08	12.42	11.44	15.73

Notes: Controls include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, a dummy variable indicating whether the district was the province center in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table 6: Distribution of Professions and Self-Employment (1985—2000)

DEPENDENT VARIABLE	(1) Share of industry in 1985	(2) Share of industry in 1990	(3) Share of industry in 2000	(4) Share of commerce in 1985	(5) Share of commerce in 1990	(6) Share of commerce in 2000	(7) Share of self-empl. in 1985	(8) Share of self-empl. in 1990	(9) Share of self-empl. in 2000
Panel A: IV									
Armenian share in 1914	-0.261	-0.0230	-0.0500	-0.00100	-0.00400	-0.0120	-0.0800	-0.00700	-0.114
	(0.166)	(0.130)	(0.129)	(0.015)	(0.018)	(0.017)	(0.068)	(0.070)	(0.080)
Observations	594	833	853	594	833	853	594	833	853
F-stat	21.83	23.49	23.87	21.83	23.49	23.87	21.83	23.49	23.87
Panel B: OLS									
Armenian share in 1914	0.0210	0.0490	0.0490	0.00500	0.00400	0.00100	-0.0160	-0.050**	-0.048*
	(0.042)	(0.042)	(0.040)	(0.005)	(0.006)	(0.006)	(0.018)	(0.022)	(0.025)
Observations	594	833	853	594	833	853	594	833	853
R-squared	0.201	0.199	0.237	0.218	0.197	0.240	0.361	0.274	0.380
Panel C: Reduced Form									
Distance to Mt. Ararat	0.274*	0.0240	0.0520	0.00100	0.00400	0.0130	0.0840	0.00700	0.120
	(0.158)	(0.137)	(0.135)	(0.016)	(0.019)	(0.018)	(0.071)	(0.074)	(0.082)
Observations	594	833	853	594	833	853	594	833	853
R-squared	0.205	0.197	0.235	0.217	0.197	0.240	0.362	0.267	0.378
Mean of dependent var.	20.34	20.91	24.12	2.826	2.887	2.917	24.49	25.12	24.97
S.D. of dependent var.	9.921	9.070	8.406	1.344	1.627	1.423	4.430	4.930	6.039

Notes: See notes of Table 3 for controls included. Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 7: PLACEBO SAMPLE

	(1)	(2)	(3)	(4)
	Islamist vote share		Primary school grad. rate	Poverty rate
DEPENDENT VARIABLE	1973-1995	Religiosity index	in 1985	in 2011
Panel A: IV				
Armenian share in 1914	12.15	-1.045	10.99	-15.28
	(42.075)	(0.8185)	(82.449)	(77.057)
Observations	844	1,972	216	327
F-stat	0.0795	1.607	0.0152	0.0345
Panel B: OLS				
Armenian share in 1914	0.105	-0.0415	0.287	-0.286
	(0.214)	(0.0871)	(0.261)	(0.235)
Observations	844	1,972	216	327
R-squared	0.363	0.153	0.380	0.317
Panel C: Reduced Form				
Distance to Mt. Ararat	1.562	0.8052***	-0.750	1.454*
	(1.065)	(0.0510)	(1.009)	(0.779)
Observations	844	1,972	216	327
R-squared	0.370	0.156	0.376	0.321
Mean of dependent var.	1.669	2.504	62.08	10.28
S.D. of dependent var.	2.661	1.200	6.762	6.630

Notes: Controls are same as those used in baseline specifications. See notes of Table 3, Table 4, and Table 5 for controls used, respectively, in columns (1), (2), (3) and (4).

For columns (1), (3), and (4): Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters. For column (2): Residents of Istanbul, Hatay, Kars, and Artvin provinces are excluded from the sample. Standard errors are clustered at the province level, there are 77 clusters.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8: TREATMENT SAMPLE

DEPENDENT VARIABLE	(1) Islamist vote share 1973-1995	(2) Religiosity index	(3) Primary school grad. rate in 1985	(4) Poverty rate in 2011
Panel A: IV				
Armenian share in 1914	0.492**	0.0340***	-0.734***	0.666***
	(0.226)	(0.0098)	(0.243)	(0.247)
Observations	1,048	3,480	264	378
F-stat	11.75	22.82	11.08	11.39
Panel B: OLS				
Armenian share in 1914	0.114	0.0243***	-0.167***	0.248***
	(0.080)	(0.0053)	(0.056)	(0.094)
Observations	1,048	3,480	264	378
R-squared	0.115	0.0910	0.670	0.632
Panel C: Reduced Form				
Distance to Mt. Ararat	-0.641**	-0.0919***	0.961***	-0.915***
	(0.290)	(0.0206)	(0.234)	(0.337)
Observations	1,048	3,480	264	378
R-squared	0.119	0.0900	0.680	0.629
Mean of dependent var.	12.14	2.837	44.06	27.93
S.D. of dependent var.	11.66	1.022	12.38	18.20

Notes: Controls are same as those used in baseline specifications. See notes of Table 3, Table 4, and Table 5 for controls used, respectively, in columns (1), (2), (3) and (4).
For columns (1), (3), and (4): Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.
For column (2): Residents of Istanbul, Hatay, Kars, and Artvin provinces are excluded from the sample. Standard errors are clustered at the province level, there are 77 clusters.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 9: MECHANISMS: HISTORICAL EDUCATION OUTCOMES (1927-1945), MIGRATION (1945), AND LAND INEQUALITY (1997)

DEPENDENT VARIABLE	(1) Literacy in 1927 (Arabic)	(2) Literacy in 1945 (Latin)	(3) Share of migrants in 1945	(4) Literacy of locals in 1945	(5) Land Gini in 1997
Panel A: IV					
Armenian share in 1914	-0.0790	-0.236**	0.206	-0.217*	0.00180
	(0.082)	(0.112)	(0.1964)	(0.114)	(0.001)
Observations	366	430	59	430	851
F-stat	18.71	23.87	9.150	23.87	23.80
Panel B: OLS					
Armenian share in 1914	0.00700	0.0120	0.2207*	0.0460	0.001***
	(0.025)	(0.038)	(0.1101)	(0.042)	(0.000)
Observations	366	430	59	430	851
R-squared	0.476	0.680	0.755	0.675	0.206
Panel C: Reduced Form					
Distance to Mt. Ararat	0.0850	0.266**	-0.287	0.244**	-0.00200
	(0.089)	(0.121)	(0.3756)	(0.124)	(0.001)
Observations	366	430	59	430	851
R-squared	0.477	0.683	0.741	0.676	0.200
Mean of dependent var.	7.014	19.93	10.21	20.17	0.693
S.D. of dependent var.	5.318	10.74	9.012	10.82	0.0927

Notes: See notes of Table 3 for controls included in columns (1), (2), (3), and (5).
See notes of Table 4 for controls at the province level included in column (3).
For columns columns (1), (2), (4), and (5): Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.
For column (3): Residents of Istanbul, Hatay, Kars, and Artvin provinces are excluded from the sample. Standard errors are clustered at the province level, there are 77 clusters.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 10: Mechanism: Population Growth (1914—1955)

DEPENDENT VARIABLE	(1) Pop. growth between 1914 & 1927	(2) Pop. growth between 1914 & 1935	(3) Pop. growth between 1914 & 1940	(4) Pop. growth between 1914 & 1945	(5) Pop. growth between 1914 & 1950	(6) Pop. growth between 1914 & 1955
Panel A: IV						
Armenian share in 1914	-2.044***	-1.400**	-1.277*	-0.773	-0.418	-0.122
	(0.552)	(0.626)	(0.715)	(0.754)	(0.911)	(1.131)
Observations	335	335	335	335	335	335
F-stat	22.77	22.77	22.77	22.77	22.77	22.77
Panel B: OLS						
Armenian share in 1914	-0.763***	-0.725***	-0.879***	-0.766***	-0.695**	-0.567
	(0.159)	(0.189)	(0.218)	(0.224)	(0.295)	(0.367)
Observations	335	335	335	335	335	335
R-squared	0.466	0.401	0.374	0.331	0.322	0.302
Panel C: Reduced Form						
Distance to Mt. Ararat	2.432***	1.666**	1.520*	0.920	0.498	0.145
	(0.613)	(0.759)	(0.891)	(0.948)	(1.134)	(1.400)
Observations	335	335	335	335	335	335
R-squared	0.451	0.382	0.347	0.312	0.310	0.297
Mean of dependent var.	-16.34	0.363	9.170	14.60	27.89	45.17
S.D. of dependent var.	27.25	34.02	39.40	43.97	51.78	67.07

Notes: Controls include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, a dummy variable indicating whether the district was the province center in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, whether district is within one-and-a-half days of the major nineteenth-century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation.

Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 11: ROBUSTNESS CHECKS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Islamist vote share between 1973 and 1995							
Armenian share in 1914	0.431***	0.366***	0.459***	0.417***	0.440***	0.451***	0.423***
	(0.154)	(0.132)	(0.143)	(0.149)	(0.165)	(0.146)	(0.162)
Observations	2,348	2,348	2,348	2,348	2,348	2,348	2,348
F-stat	22.13	18.17	29.25	24.05	22.91	25.21	31.21
Panel B: Religiosity index							
Armenian share in 1914	0.0317***	0.0235***	0.0330***	0.0318***	0.0351***	0.0312**	0.0114**
	(0.0116)	(0.0089)	(0.0096)	(0.0117)	(0.0134)	(0.0125)	(0.0057)
Observations	6,559	6,559	6,559	6,559	6,559	6,559	6,559
F-stat	20.26	18.52	40.57	20.99	20.76	18.42	74.34
Panel C: Primary school graduation rate in 1985							
Armenian share in 1914	-0.384***	-0.327***	-0.414***	-0.384***	-0.421***	-0.436***	-0.526***
	(0.135)	(0.119)	(0.119)	(0.131)	(0.143)	(0.136)	(0.140)
Observations	594	594	594	594	594	594	594
F-stat	21.83	17.82	28.91	23.83	22.67	24.65	30.63
Panel D: Poverty rate in 2011							
Armenian share in 1914	0.509***	0.457***	0.467***	0.520***	0.533***	0.644***	0.361**
	(0.159)	(0.143)	(0.145)	(0.159)	(0.178)	(0.155)	(0.146)
Observations	880	880	880	880	880	880	880
F-stat	24.17	16.92	30.57	25.46	26	28.23	36.11
Baseline controls	✓	✓	✓	✓	✓	✓	✓
Alternative Armenian pop.		✓					
Russian occupation			✓				
Occupation after WWI				✓			
Kurdish conflict					✓		
Climatic indicators						✓	
Subregion FE							✓

Notes: All columns include controls used in the baseline specifications. See notes of Table 3 for controls used in, Table 4, and Table 5 for controls used, respectively, in Panel A, Panel B, Panels C and D.

For Panels A, C, and D: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

For Panel B: Residents of Istanbul, Hatay, Kars and Artvin provinces are excluded from the sample. Standard errors are clustered at the province level, there are 77 clusters.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Seyhun Orcan SAKALLI

SUPPLEMENTARY ONLINE APPENDIX

to

Coexistence, Polarization, and Development: the Armenian Legacy in Modern Turkey

A DATA APPENDIX

A.1 MATCHING OF DISTRICTS OVER TIME

During the period 1914-2011, district borders changed considerably. There were 957 districts in Turkey in 2011, whereas there existed only 369 districts in 1914. When a district reaches a certain population, it splits into new districts for the ease of public administration. Most of the border changes happened due these splits. However, between 1914 and 1935 some districts were merged because their population fell substantially as a result of wars. There are 18 such cases between 1914 and 1927, and 3 cases between 1927 and 1935. I consider the merged district as a single administrative unit and aggregate the historical population data at the merged district level. Therefore, the variation in historical population stems from 342 districts in total. 7 out of 342 districts are districts of Istanbul and are excluded from the analysis.

I employed various sources to match districts over time. For the Republic period (1923-) the most important source is the laws passed in the parliament and the decree laws signed by the government to change district borders to rename districts. The laws and decree laws passed after 1953 tabulates the name of villages and parishes that are transferred from existing district(s) to the new one. To infer the border changes in the period between 1927 and 1953, I used maps dated 1927 and 1940 and the changes in the surface area of districts published in census result reports. For the period 1914-1927, I employed the reprinted Ottoman Atlas of 1907 (Nasrullah, 2003) and an alphabetical index of localities in the Ottoman Empire (Sezen, 2006). Moreover, I used maps dated 1914 and 1927 to detect border changes.

A.2 TRAVEL DISTANCE CALCULATIONS

I used ArcGIS® software, and in particular the "cost distance" tool, to perform distance calculations. The cost distance tool uses an algorithm that calculates the shortest distance (or accumulated travel cost) from each point in the map to the nearest destination. The cost distance requires user to provide a cost raster, which defines the cost of passing through every grid cell. This tool applies distance in cost units, not in geographic units. The units assigned to the cost raster can be any type of cost desired: dollar cost, time, energy spent. In this study, the cost unit is travel days.To create the cost raster, I make the assumption that it is five times less costly to travel by sea than to travel on foot, and that one day of travel on foot equals to 30 kms, and one day of travel by sea equals to 150 kms on average. I neglect both modern and past road networks to construct a distance measure that captures the travel distance in ancient times, thus the cost raster depends solely on topography of the land. I use the "slope tool" of ArcGIS®and SRTM elevation data (Jarvis et al., 2008) at 3 arc-seconds resolution, i.e., approximately 90m at the equator (Panel (a) of Figure A1) to calculate the terrain slope (Panel (b) of Figure A1).[1] The idea behind this step is the fact that it is more difficult to walk on a terrain with a slope than on a flat terrain (Minetti et al., 2002). Finally, I compute the energy spent as a function

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[1]For each grid cell, the slope tool calculates the maximum change in elevation over the distance between the grid cell and its eight neighbors, and identifies the rate of maximum change in z-value (altitude) from each grid cell.

of slope using a formula that comes from Minetti et al. (2002) and normalize it by the energy that would be spent while walking on a flat terrain (Panel (c) of Figure A1).[2] I consider rivers and lakes non-navigable, except for sizeable lakes such as Lake Van, Lake Tuz, Lake Eğridir, and Lake Beyşehir and assume that navigating on these lakes is as fast as walking on flat terrain. Panel (c) and (d) of Figure A1 shows some examples of least costly travel paths from Mount Ararat to selected district centers.
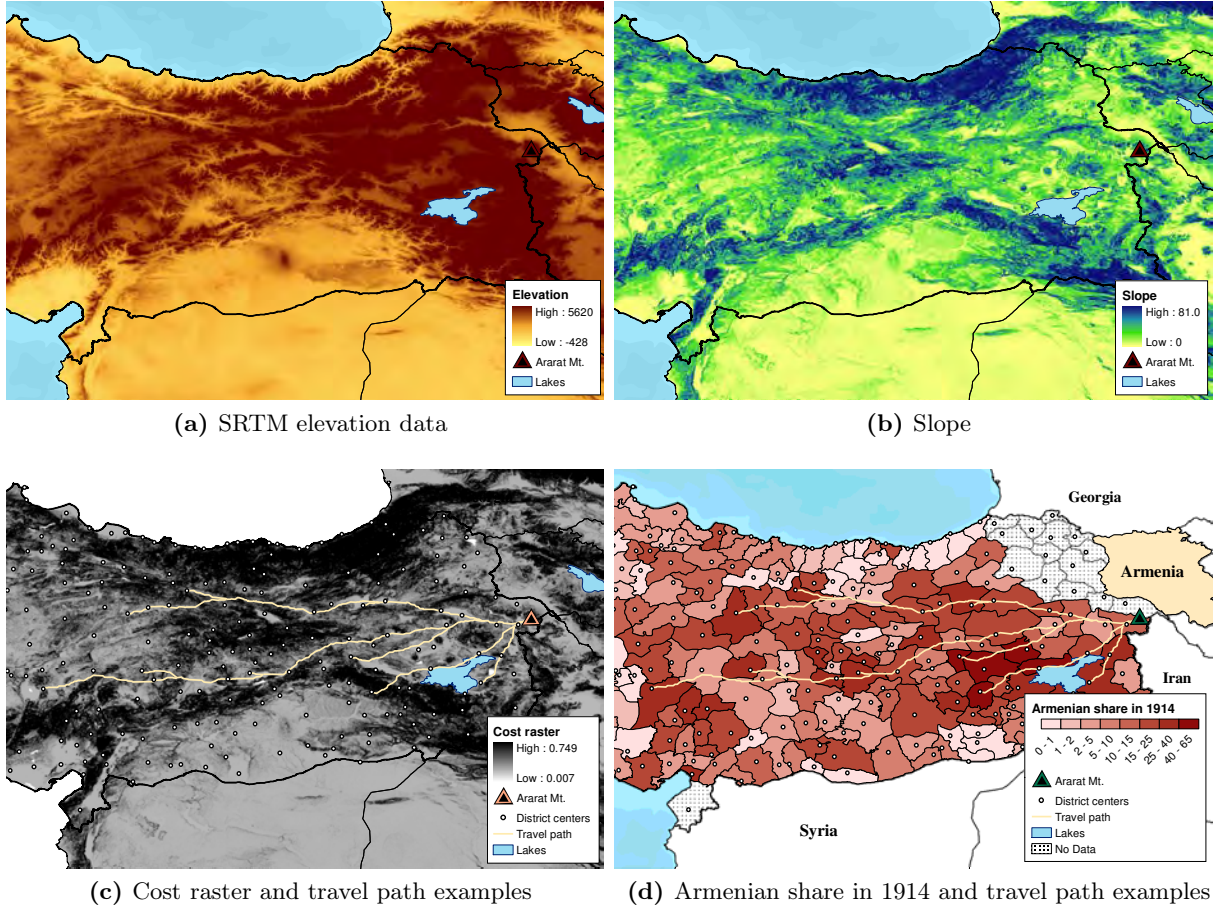

(a) SRTM elevation data

(b) Slope

(c) Cost raster and travel path examples

(d) Armenian share in 1914 and travel path examples

Figure A1: CREATION OF COST RASTER AND DISTANCE CALCULATION

A.3 CONSTRUCTION OF VARIABLES

HISTORICAL POPULATION DATA

The first Ottoman census was conducted in 1831, and the last one was conducted in 1905/1906. Population registers were updated every three months according to the tabulations of birth, death, in- and out-migration records compiled by population registry officials in the districts. Population statistics of 1914 is an updated version of 1905/1906 census results (Dündar, 2008).

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[2]The formula used is the following:

$$Cw_i = 2.5 + 19.6i + 51.9i^2 + 76.8i^3 + 58.7i^4 + 280.5i^5$$

where i stands for inclination (slope), and Cw_i stands for the calorie spent while walking on terrain with inclination i.

The 1914 population data used in this study were published for the first time by Karpat (1985). In total, there are 22 ethno-religious groups identified in 1914. Full list is as follows: Muslims, Greeks, Armenians, Jews, Greek Catholics, Armenian Catholics, Protestants, Latins, Syriacs, Old Syriacs, Chaldeans, Jacobites, Maronites, Samaritans, Nestorians, Yezidis, Gypsies, Druzes, Cossacks, Bulgarians, Serbians, and Wallachians. The population data for the Republic period comes from the published census results. Armenian Share in 1914 is calculated as follows:

$$ArmenianShare_{1914,d} = 100 * \frac{ArmenianPop_{1914,d}}{TotalPop_{1914,d}}$$

where d stands for district. The Greek share in 1914 is calculated similar way.

I use the Armenian Patriarchate's census of 1913/14 as an alternative data source to identify the spatial distribution of Armenians. There is a substantial discrepancy between the numbers on Armenian population provided by the official Ottoman data and the Armenian Patriarchate's data. According to the estimates of the Armenian Patriarchate the number of Armenians living in the Ottoman Empire was 1,914,620, whereas according to the official Ottoman data the same figure was 1,112,614. However, Ottoman authorities acknowledged that their estimates were likely to suffer from undercounting by about 30% (Bardakçı, 2008).

Population census of 1927 tabulates the population according to native language in addition to religion for the first time. It is possible identify the spatial distribution of Muslim ethno-linguistic minorities of Turkey, i.e. Kurds, and Arabs, in the early years of the Republic. I impute the Kurdish and Arabic shares in 1914, since Kurdish and Arabic shares in 1927 are mechanically correlated with Armenian share in 1914. Consider a district with the population distribution in 1914 as follows: 50 Turks (50%), 20 Kurds (20%), 10 Arabs (10%), and 20 Armenians (20%). Imagine in 1927, there were no Armenians in the district, and the relative share of Turks, Kurds, and Arabs has not changed, their absolute shares would be, respectively, 62,5%, 25%, and 12,5%. The share of non-Armenian groups are inflated because of the fall in the denominator, i.e., total population, and the size of this inflation is correlated with the size of Armenian share in 1914. In order to correct for this, I impute Kurdish share in 1914 as follows:

$$KurdishShare_{1914,d} = KurdishShare_{1927,d} * (1 - ArmenianShare_{1914,d})$$

where d stands for district. Arabic share in 1914 is imputed in the same way. The assumption made here is that the population growth for each ethnic group (or their relative shares) would have been the same (would not change) in the absence of the World War I and the deportation of Armenians in 1915-1916.

Islamist Politics and Religiosity Outcomes

Islamist voting

I collected data on every parliamentary election in which at least one Islamist party participated, namely election results for 1973, 1977, 1991, 1995, 1999, 2002, 2007, 2011 parliamentary elections. These election results are compiled by the Turkish Statistical Institute (hereafter TurkStat). I

calculate the share of votes cast for conservative parties as:

$$ShIslamist_{t,d} = 100 * \frac{\text{Number of votes cast for Islamist parties}_{t,d}}{\text{Number of valid votes cast}_{t,d}}$$

where d stands for district, and t stands for election year. Islamist parties in consideration are National Salvation Party (*Milli Selamet Partisi*) in 1973 and 1977, Welfare Party (*Refah Partisi*) in 1991 and 1995, Virtue Party (*Fazilet Partisi*) in 1999, Justice and Development Party (*Adalet ve Kalkınma Partisi*), Felicity Party (*Saadet Partisi*) in 2002, 2007 and 2011, and Great Union Party (*Büyük Birlik Partisi*) in 1999, 2002, and 2011
. Election results can be reached through TurkStat's web application. Last accessed on October 8, 2013.

Religious practices

Data on religiosity comes from 2008 Turkish Demographic and Health Survey (hereafter TDHS 2008). TDHS 2008 is representative not only at the national level but also at five major regions of the country (the West, South, Central, North, East), and consists of two modules, household member module and ever-married women module. The latter includes information on religious practices and basic socioeconomic variables, and is conducted for all ever-married women between the ages of 15 and 49 ages-old in the household member module, covering 7405 women. Information on religious practices comes from two questions asked in the ever-married woman module:

i. "Do you perform *namaz* (prayer)?"; possible answers: "No", "Regularly", "Irregularly";

ii. "Do you fast?"; possible answers: "No", "Regularly", "Irregularly".

I recode answers to these three questions to construct four dummy variables, *performs namaz regularly* that takes the value of 1 if the individual performs *namaz* regularly, 0 otherwise, *fasts regularly* that takes the value of 1 if the individual fasts regularly, 0 otherwise, *performs namaz at all* that takes the value of 1 if the individual performs *namaz* regularly or irregularly, 0 otherwise, and *fasts at all* that takes the value of 1 if the individual fasts regularly or irregularly, 0 otherwise. I construct a composite religiosity index using the first principal component of the *performs namaz regularly* and *fasts regularly* dummy variables.

Alevi share

Muslims in Turkey can be broadly separated into two sects of Islam; *Sunnis* and *Alevis*. The distinction between *Alevis* and *Sunnis* matters for this study, because *Alevis* don't perform the religious practices of Sunni Islam such as performing *namaz* or fast during Ramadan. *Alevis* perform their religious ceremonies in *cemevi*s (house of gathering) instead of mosques. Their true number is unknown, because during the Republican period no question has ever been asked to Muslims in Turkey on the religious denomination they are affiliated by the census-takers. The only official information on *Alevis* is the number of *cemevi* per province as of January 1, 2013. Therefore, I proxy the spatial distribution of *Alevis* by calculating the number of *cemevi* per 100 mosques in a given province.

Information on the number of *cemevi* comes from the official response to a written inquiry submitted to the parliament by Hüseyin Aygün, a MP representing Tunceli province, on the number of *Alevi* worship places. The official response can be accessed through this link. Last accessed on October 8, 2013. Information on the number of mosques by province comes from Directorate of Religious Affairs (*Diyanet İşleri Başkanlığı*), and can be accessed through this link. Last accessed on October 8, 2013.

DEVELOPMENT OUTCOMES

Education outcomes

Data on education for 1985, 1990 and 2000 comes from the two following questions asked by the census-takers: "Are you literate?", "What is the last degree you have obtained?". The former question is asked to everyone aged 6 or older, whereas the latter is asked only to those who said "yes" to the former question. Literacy rate and share of primary school graduates are calculated as:

$$Literacy_{t,d} = 100 * \frac{\text{Number of literates}_{t,d\,|age \geq 6}}{Pop_{t,d\,|age \geq 6}}$$

$$PrimarySch_{t_d} = 100 * \frac{\text{Number of primary school graduates}_{t,d\,|age \geq 6}}{Pop_{t,d\,|age \geq 6}}$$

where d stands for district, and t stands for census year. Census results can be accessed through TurkStat's web application. Last accessed on October 8, 2013.

Poverty

I use the information on the number of Green Card (*Yeşil Kart*) affiliates to proxy poverty rate in 2011. The Green Card system, which is a means-tested non-contributory social security program, was put in place with the Law No. 3816 on June 16, 1992. Its aim is to cover healthcare expenditures of citizens, who are not covered by any other social security system and not able to cover healthcare expenditures themselves. Eligibility criterion for Green Card system is to earn less than one third of the minimum wage. In order to decrease the increasing cost of the system and prevent its abuse, government implemented a means-test method in 2011 and cancelled green cards the holders of which don't meet the eligibility criterion. Poverty measure is calculated as:

$$Poverty_{2011,d} = 100 * \frac{\text{Number of Green Card holders}_{2011,d}}{TotalPop_{2011,d}}$$

where d stands for district. The number of Green card affiliates per district as of December 31, 2011 comes from the Ministry of Health, and can be accessed through this link. Last accessed on October 8, 2013. Denominator, population in 2011, comes from ADNKS (Address-Based Population Registry System) of TurkStat, and can be accessed through TurkStat's web application. Last accessed on October 8, 2013.

Land gini

Land gini is computed using land holding size information comes from the published results of TurkStat's Village Inventory of 1997 study.[3] The land holding data published provides information on the number of households and the total size of the land they have by the land holding size brackets (e.g., 1 to 5 hectares, 5 to 10 hectares) at the district level. There is no information on the variation of land holding households within each land-holding size bracket. I assume that the variation in land holding size across households within each bracket is zero. Therefore the land gini index I compute should be interpreted as a lower bound of the real land inequality. I proxy the land gini index with the following formula:

$$LandGini_{1997,d} = 1 - \sum_{k=1}^{n}(X_k - X_{k-1}) * (Y_k + Y_{k+1})$$

where k stands for the land holding size bracket number, Y_k and X_k are the points known on the Lorenz curve, calculated using the landholding data by land holding size brackets.

Self-employment

Data on self-employment for 1985, 1990 and 2000 comes from census results. Share of self-employed is calculated as:

$$Self-employed_{t,d} = 100 * \frac{\text{Number of self-employed}_{t,d\,|age\geq12}}{Pop_{t,d\,|age\geq12}}$$

where d stands for district, and t stands for census year. Census results can be accessed through TurkStat's web application. Last accessed on October 8, 2013.

Distribution of Professions

Data on distribution of professions across sectors for 1927, 1945, 1985, 1990 and 2000 comes from census results. Share of population with a profession in industry and commerce are calculated as:

$$ShIndustry_{t,l} = 100 * \frac{\text{Number of individuals with a profession in industry}_{t,l\,|age\geq12}}{Pop_{t,l\,|age\geq12}}$$

$$ShCommerce_{t,l} = 100 * \frac{\text{Number of individuals with a profession in commerce}_{t,l\,|age\geq12}}{Pop_{t,l\,|age\geq12}}$$

where t stands for census year, l stands for district in 1927, 1985, 1990, and 2000, and for province in 1945. Census results for 1985, 1990, and 2000 can be accessed through TurkStat's web application. Last accessed on October 8, 2013.

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[3]Devlet İstatistik Enstitüsü, *1997 Köy Envanteri, vol. 1-81.*, Ankara: Devlet İstatistik Enstitüsü Matbaası, 2002.

Historical Education Outcomes

Information on literacy in 1927 comes from the published results of 1927 census.[4] Literacy in 1927 means literacy in Arabic script. The number of literates and illiterates published in 1927 census results include 0-6 year-old population which has not yet reached school age. I correct for this by subtracting the number of 0-6 year-old population from illiterate population (denominator). Information on the number of population aged between 0 and 6 comes also from the published 1927 census results. I calculate the literacy rate in 1927 as:

$$Literacy_{1927,d} = 100 * \frac{\text{Number of literates}_{1927,d}}{TotalPop_{1927,d} - Pop_{1927,d \,|age \leq 6}}$$

Information on literacy in 1945 comes from the published results of 1945 census.[5] Literacy in 1945 means literacy in Latin alphabet. The number of literates and illiterates published in 1945 census results also include 0-6 year-old population which has not yet reached school age. Unfortunately, information on the population size by age isn't available at the district level in 1945. I compute the share of population aged between 0 and 6 at the province level, and use this information to impute the 0-6 year-old population at the district level, assuming that within province variation is zero. Literacy rate in 1945 is calculated as:

$$Literacy_{1945,d} = 100 * \frac{\text{Number of literates}_{1945,d}}{TotalPop_{1945,d} - imputedPop_{1945,d \,|age \leq 6}}$$

Historical Migration and Fertility Outcomes

Information on migration and fertility in 1945 comes from the published results of 1945 census. I calculate the migration rate in 1945 at the province level as:

$$ShMigrant_{1945,p} = 100 * \frac{\text{Number of residents born in another province}_{1945,p}}{TotalPop_{1945,p}}$$

As for fertility outcomes, I construct two measures: the median age in 1945 and number of 0-9 aged kid over 100 reproductive woman in 1945.

Village-Level Data

Information on the ethnic origin of villages which comes from Nişanyan (2010), which provides not only the list of all localities the names of which were changed during the Republican period (1923-), but also the linguistic origins of these localities former names. I use the latter to classify villages as former Armenian, former Greek, Arabic, and Kurdish villages. Outcome variables at the village level are constructed the same way as they are at the district level. Information on literacy is available only for villages with a population over 50.

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[4] İstatistik Umum Müdürlüğü, *Umumi nüfus tahriri 28 Tesrinievel 1927 = Recensement Général de la Population au 28 Octobre 1927, vol. 1-2*, Ankara: İstatistik Umum Müdürlüğü, 1929.

[5] İstatistik Genel Müdürlüğü, *21 Ekim 1945 genel nüfus sayımı = Recensement general de la population du 21 Octobre 1945, vol. 1 - 64*. Ankara: Devlet İstatistik Enstitüsü, 1950.

Data on socioeconomic outcomes for 1985, 1990 and 2000 come from census results at the village level. Census results at the village level can be accessed through TurkStat's web application. Last accessed on October 8, 2013. Data on parliamentary elections results (from 1991 onwards) at the village level are compiled by the TURKSTAT (Turkish Statistical Institute). Election results at the village level can be reached through TurkStat's web application. Last accessed on October 8, 2013.

Geographical Controls

Figure A2 presents the geographical location of Constantinople and Ankara (capitals of the Ottoman Empire and the Republic of Turkey, respectively), major nineteenth century ports, rivers and streams, and the railways network in 1914.

Figure A2: Geographical controls

geographical-regions

The geographical-regions of Turkey were defined by geographers during First Geography Congress held in Ankara in 1941. Geographers took into account geographical factors such as climate, vegetation, presence of mountain ranges, and also some economic factors such as demographics, transportation and type of products cultivated, while defining the regions, Regions don't refer to an administrative division. Figure A3 shows the geographical-regions of Turkey. There are seven regions and twenty-one subregions in total. However, I merged the Yıldız Dağları subregion is merged with the Ergene subregion, because it is too small.

(a) 7 regions

(b) 20 subregions

**Figure A3:** GEOGRAPHICAL-REGIONS OF TURKEY

Distance measures

I calculated travel distance to Mt. Ararat, to Constantinople, to the coast, to the eastern border using ArcGIS® software. Please see Appendix A.2 for the details of the the travel distance calculations. Traveling by sea is only allowed while calculating travel distance to Istanbul. For Armenians are not a maritime nation, while calculating distance to Mt. Ararat, I assumed that travel is only possible by land. Travel distance to to the eastern border are computed in a similar way as travel distance to Mt. Ararat because the eastern border isn't neighboring any sea. Figure A4 presents visually the distance measures. Panels (a), (b) and (c) show travel distances, respectively, to Constantinople, to the coast, and to the eastern border.
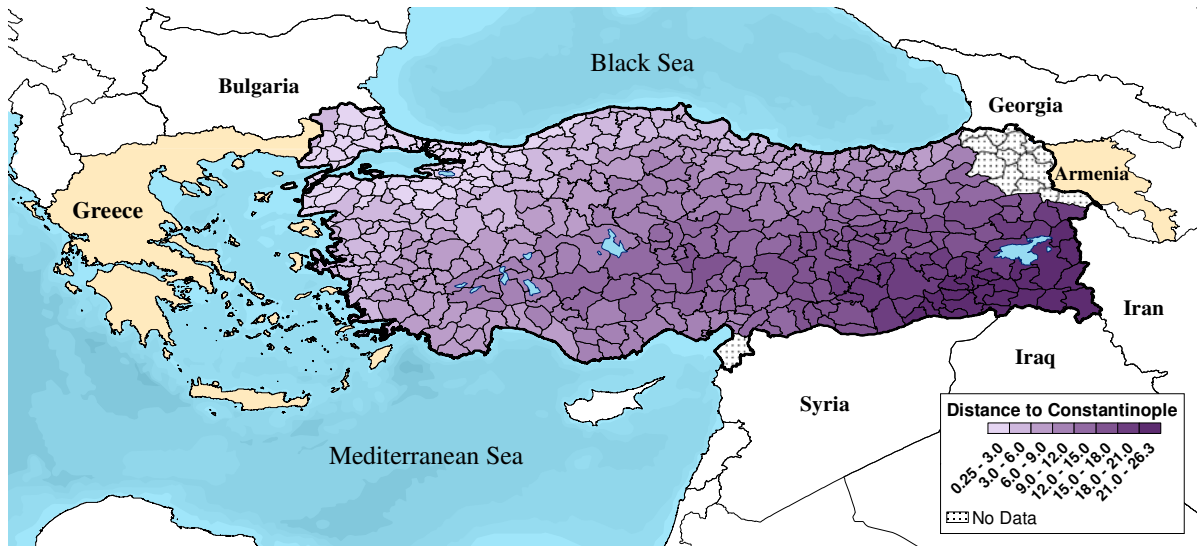
(a) travel distance to Istanbul

(b) Travel distance to the coast
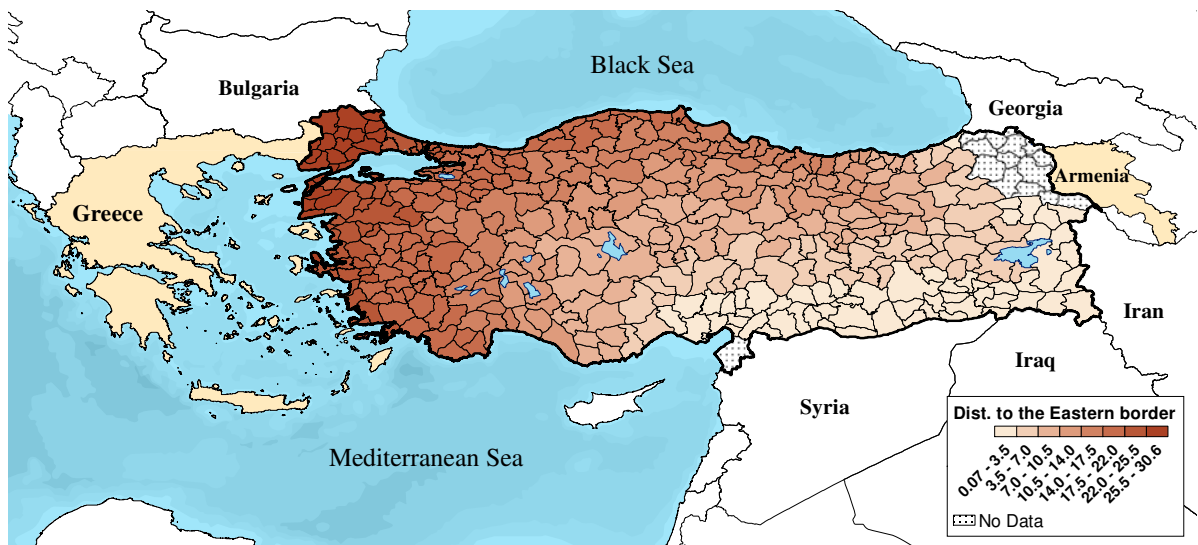
(c) Travel distance to the eastern border

Figure A4: Distance Measures

Population density

Population density in 1914 is calculated as total population in 1914 divided by the surface area of district in 1914.

Province center

I create a dummy variable that takes the value of 1 if the district was the central district of its province in 1914, and 0 otherwise.

Port cities

First, travel distance to the major nineteenth century ports, namely the ports of Constantinople [Istanbul], Trabzon [Trebizond], Mersin, Iskenderun [Alexandretta], Samsun and Izmir [Smyrna] is calculated using ArcGIS®software. Then, I create a dummy variable that takes the value of 1 if district is within one and a half travel days from one of the major nineteenth century ports, and 0 otherwise. Figure 7 shows the spatial distribution of the constructed dummy variable. As can be seen from Figure A5, the size of a port's hinterland depends on topography around the port and varies substantially.

Figure A5: TRAVEL DISTANCE FROM THE MAJOR NINETEENTH CENTURY PORTS

Railroad network

Information on the historical railroad network comes from Akgüngör et al. (2011). I digitized the map showing the railroad network in 1914 and created a dummy variable that takes the value of 1 if the railroad network passed though the district in 1914, and 0 otherwise.

River length

Information on rivers comes from USGS HydroSHEDS data set (Lehner, Verdin and Jarvis, 2008). USGS HydroSHEDS uses NASA's Shuttle Radar Topography Mission (SRTM) eleva-

tion data at 3 arc-seconds resolution (approximately 90 meters at the equator) to identify the river networks, watershed boundaries, drainage directions, and flow accumulations. I classified river polylines into two categories (rivers and streams) using the physical map of Turkey produced by the General Command of Mapping - the national mapping agency of Turkey under the Ministry of National Defense.[6] Then, I calculated the length of rivers and streams using ArcGIS® software and normalized them by the surface area of districts.

Latitude

Mean latitude is calculated at the district level using ArcGIS® software.

Altitude

Altitude information comes from NASA's Shuttle Radar Topography Mission (SRTM) data set (Jarvis et al., 2008). Mean altitude is calculated at the district level using ArcGIS®software.

Suitability indices

Suitability indices come from GAEZ v3.0 data set (IASA/FAO, 2012). Suitability indices reflect the suitability of land for cultivating crops with low inputs and without irrigation (rain-fed), and varies between 0 and 100. Mean suitability indices for wheat, cotton, and olive are calculated at the district level using ArcGIS® software.

Climatic indicators

Climatic indicators in consideration are mean annual temperature and precipitation over the period 1960-1990. They come from GAEZ v3.0 data set (IASA/FAO, 2012). Means of these climatic indicators are calculated at the district level using ArcGIS® software.

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[6]The physical map can be accessed through this link. Last accessed on October 8, 2013.

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B Excluded Results
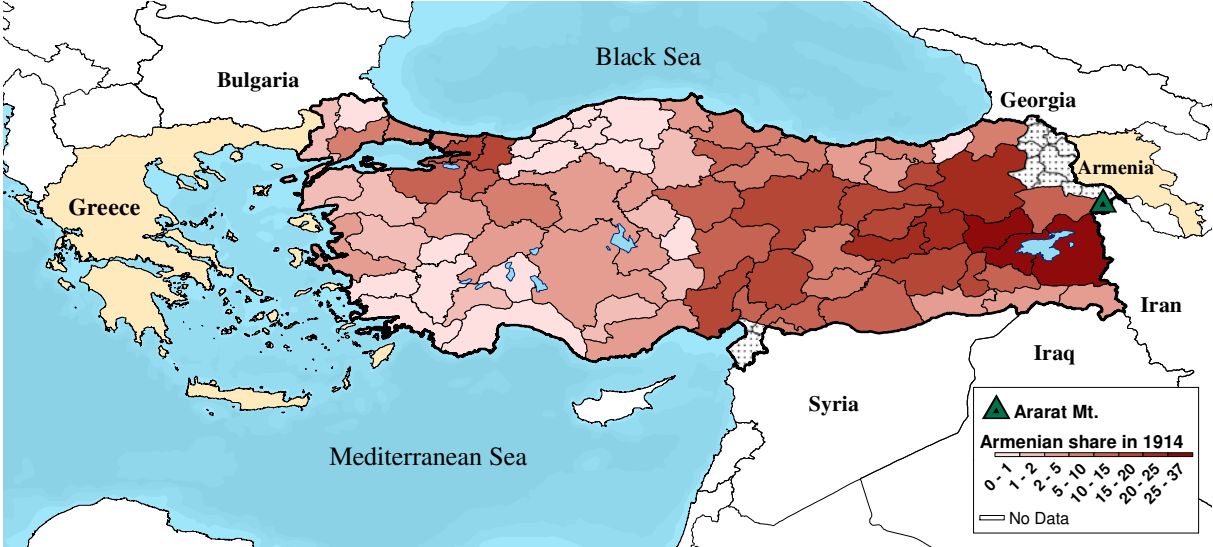
(a) Distribution of Armenians in 1914
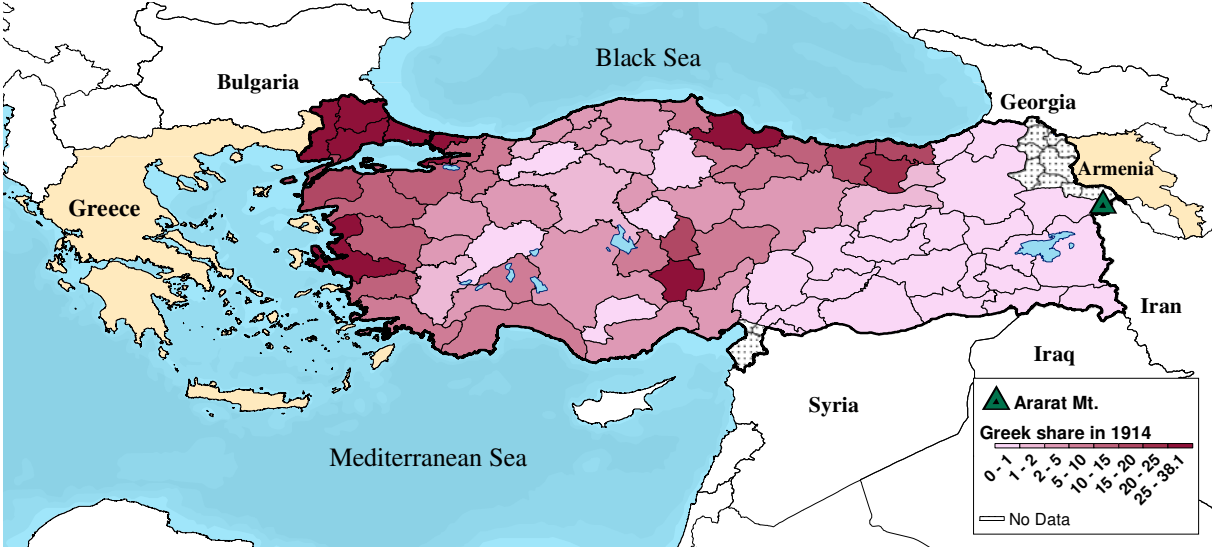
(b) Distribution of Greeks in 1914

Figure B1: Spatial distribution of Armenians & Greeks at Province level

Notes: An "Armenian" is defined as a person who was affiliated with the Armenian Apostolic Church or the Armenian Catholic Church in 1914. A "Greek" is defined as a person who was affiliated with the Greek Orthodox Church or the Greek Catholic Church in 1914. Data source: Karpat (1985). Map approximates 2010 administrative borders.
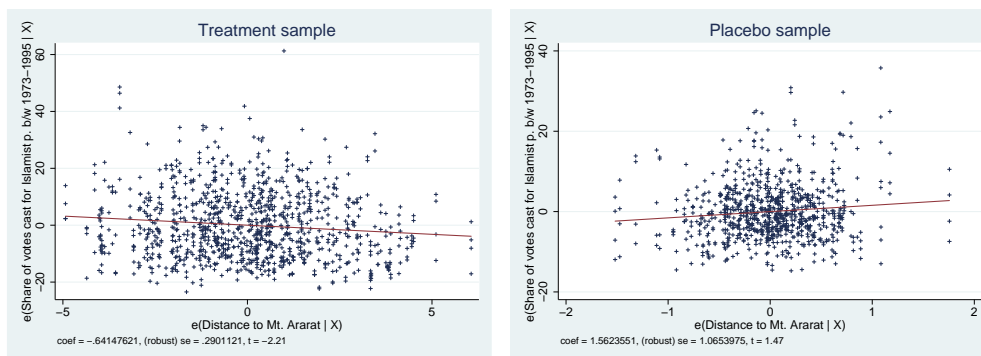
(a) Share of votes cast for Islamist political parties (1973-2011)
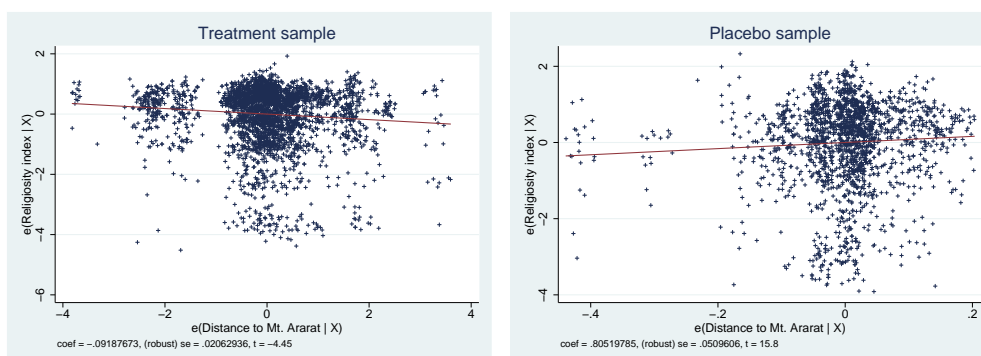
(b) Religiosity index
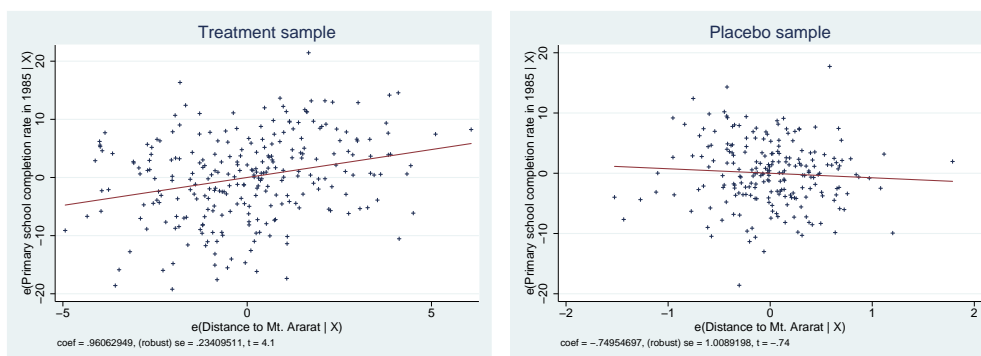
(c) Primary school completion rate in 1985
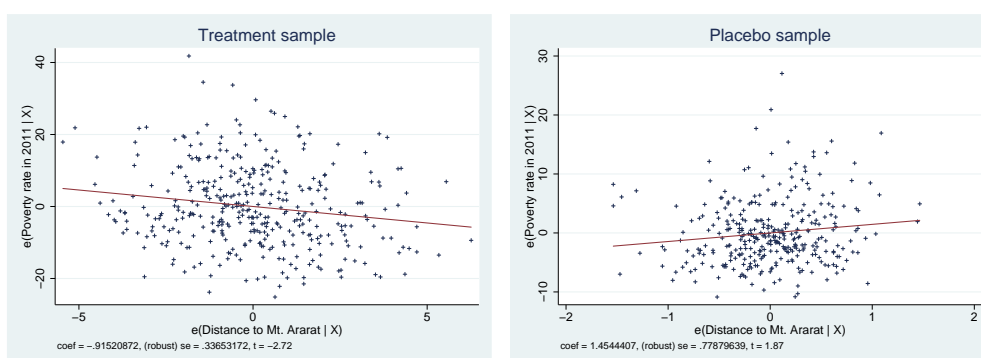
(d) Poverty rate in 2011

Figure B2: Partial Regression Plots For Treatment and Placebo Samples

Notes: Partial regression plots from OLS estimates. Unit of analysis is district. The horizontal axis represents residuals obtained from regressing the instrumental variable on covariates. The vertical axis represents residuals obtained from regressing dependent variable on covariates. See notes of Table 3, Table 4, and Table 5 for controls used, respectively, in Panel (a), Panel (b), and Panels (c) and (d). Standard errors are clustered at the administrative level of 1914.

A15
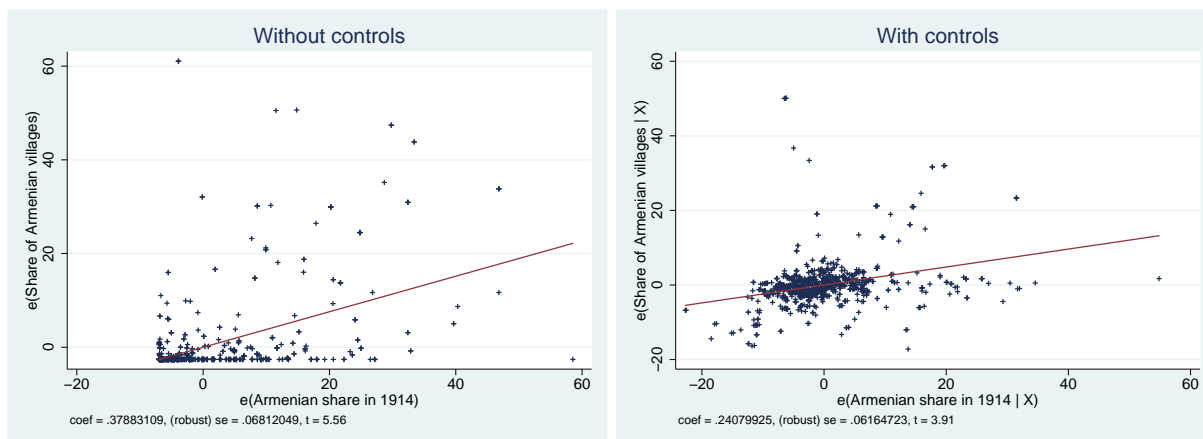
(a) Armenian village share and Armenian share in 1914
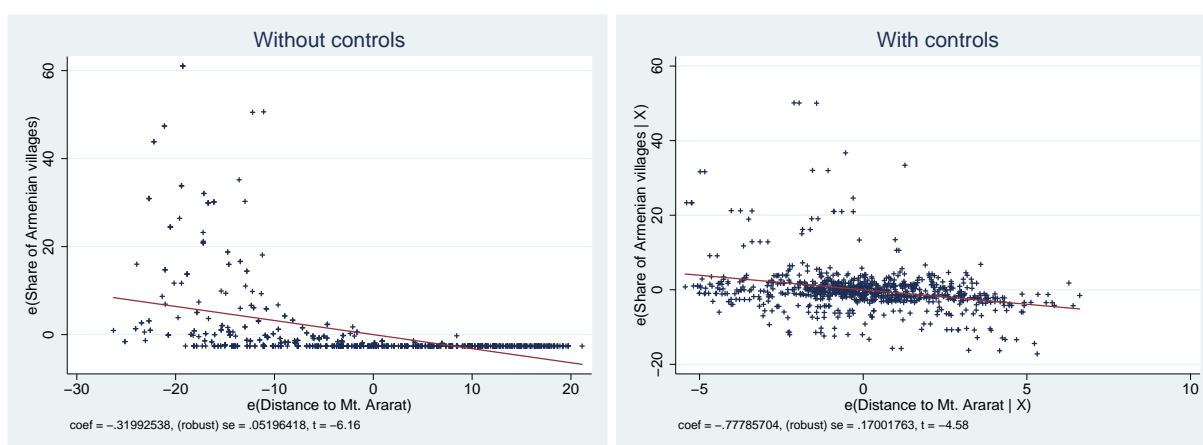
(b) Armenian village share and distance to Mt. Ararat

Figure B3: CORRELATION BETWEEN SHARE OF ARMENIAN VILLAGES, ARMENIAN SHARE IN 1914, AND DISTANCE TO MT. ARARAT

Notes: Partial regression plots from OLS estimates. Unit of analysis is district. Standard errors are clustered at the administrative level of 1914. The horizontal axis represents residuals obtained from regressing the share of Armenian villages on covariates. The vertical axis represents residuals obtained from regressing dependent variable on covariates. Covariates include geographical-region fixed effects, the Greek share in 1914, imputed Kurdish share in 1914, the Arabic share in 1914, travel distance to Istanbul, travel distance to the eastern border, travel distance to the coast, a dummy variable indicating whether the district was the central district of the province in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean altitude and latitude of the district, and mean suitability indices for wheat, olive, and cotton production.
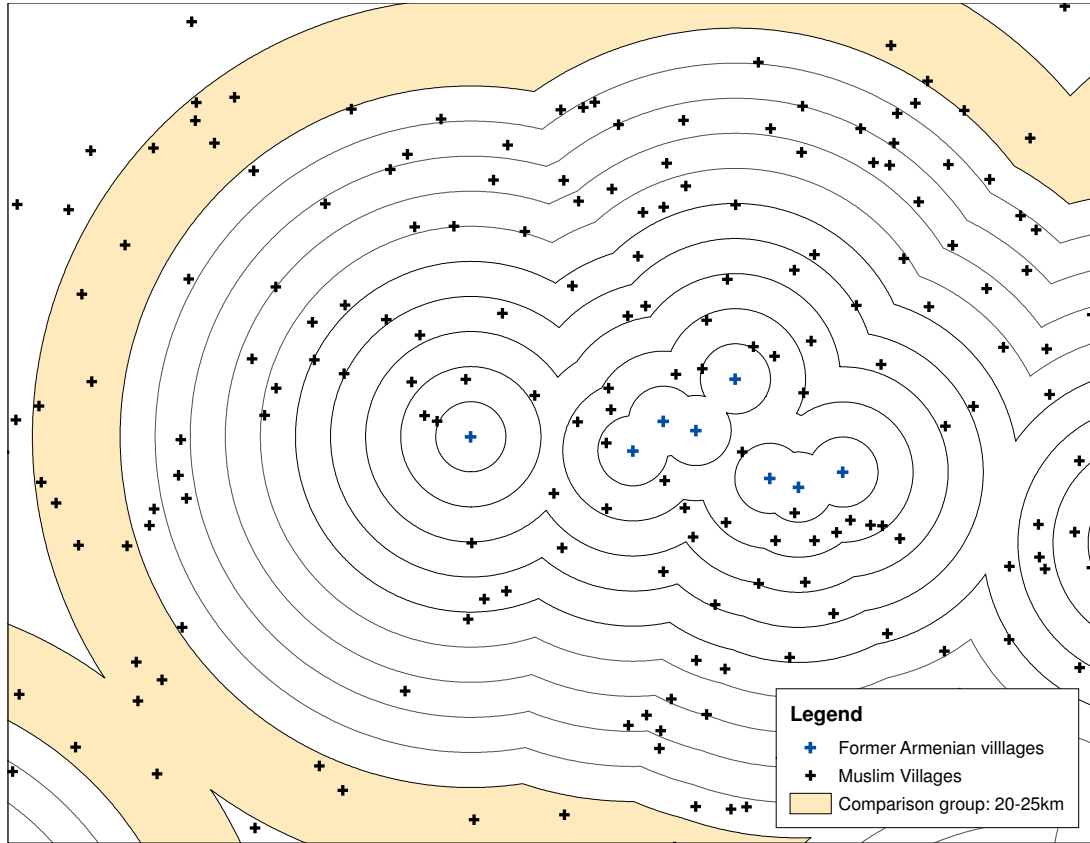
Figure B4: Iso-distance curves: An illustration

Notes: Blue plus signs represent former Armenian villages. An Armenian village is a village whose name's linguistic origin is identified as Armenian by Nişanyan (2010). Black plus signs represent Muslim villages. A Muslim village is a village whose name's linguistic origin is not identified as Armenian, Bulgarian, Greek, or Russian by Nişanyan (2010). Each isodistance curve corresponds to locations that are equidistant to former Armenian villages, and the distance between each consecutive isodistance curve is two kilometers. Data source: Nişanyan (2010).
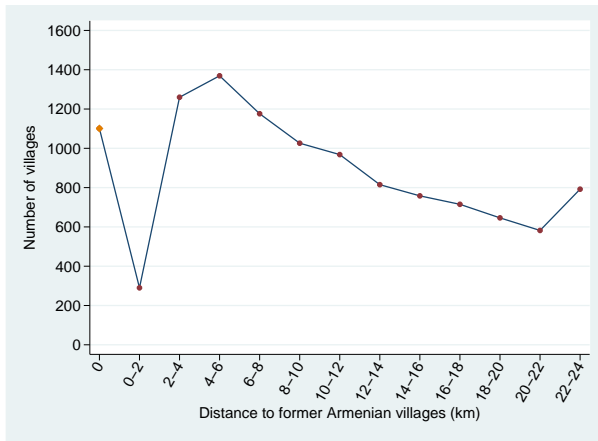
(a) Within 25 kilometers of former Armenian villages
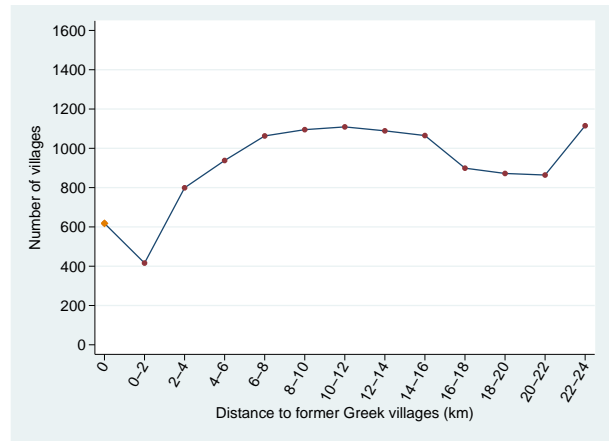
(b) Within 25 kilometers of former Greek villages

Figure B5: DISTRIBUTION OF MUSLIM VILLAGES

Notes: The horizontal axis represents distance to former Armenian villages. The vertical axis represents the number of Muslim villages.
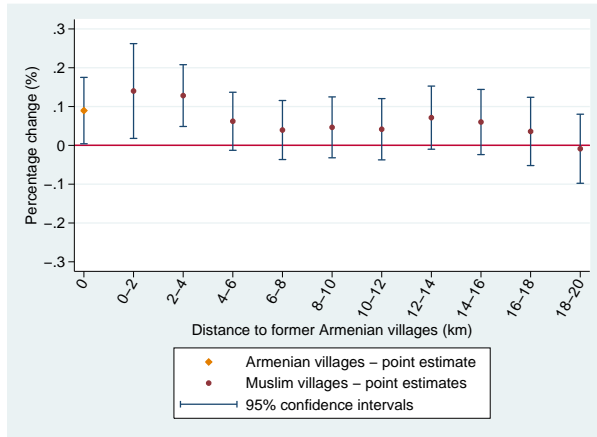
(a) Share of votes cast for Islamist parties in 1991
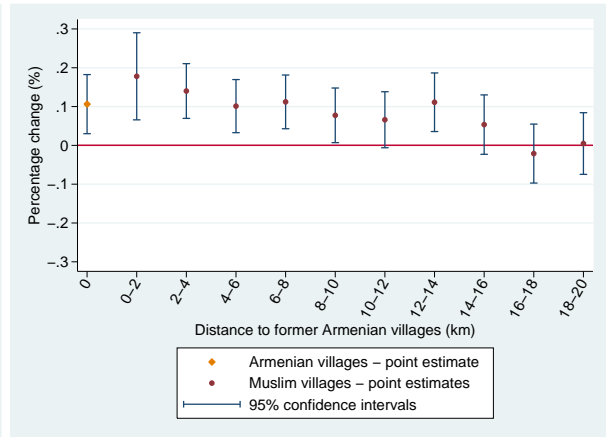
(b) Share of votes cast for Islamist parties in 1995
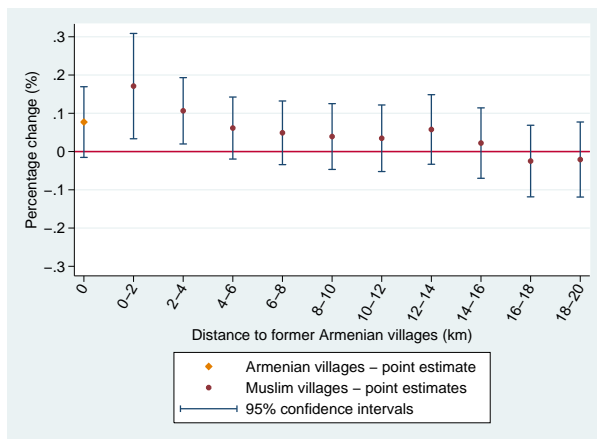
(c) Share of votes cast for Islamist parties in 1999
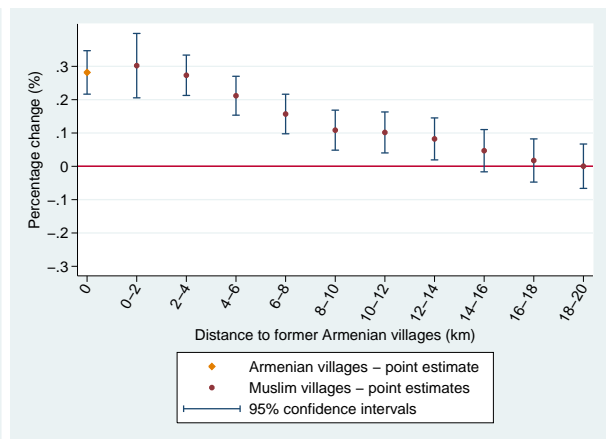
(d) Share of votes cast for Islamist parties in 2002
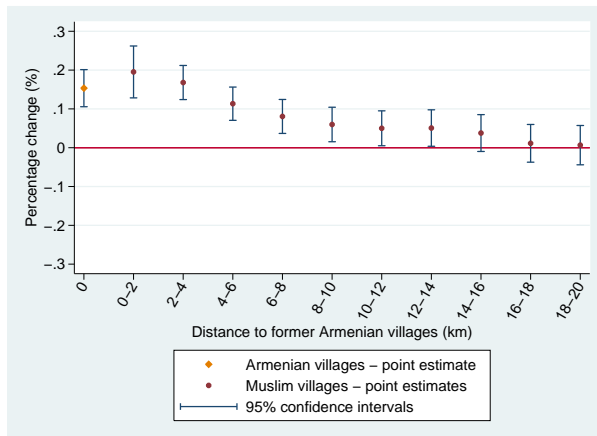
(e) Share of votes cast for Islamist parties in 2007
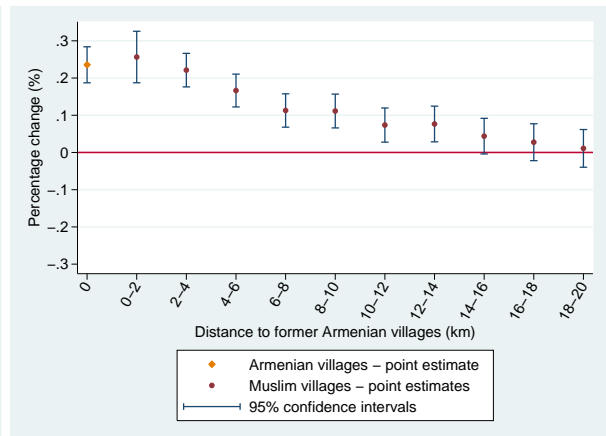
(f) Share of votes cast for Islamist parties in 2011

Figure B6: POLITICAL OUTCOMES FOR ARMENIAN VILLAGES:
FLEXIBLE PARAMETRIC VILLAGE-LEVEL ANALYSIS (PROVINCE FIXED EFFECTS INCLUDED)

Notes: Point estimates and confidence intervals at 95% from OLS estimates. The sample is restricted to the treatment sample shown in Figure 3. Muslim villages that are within 20 to 25 kilometers of former Armenian villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The horizontal axis represents distance to former Armenian villages. The vertical axis represents share of votes cast for Islamist parties normalized by the sample mean in the given election year Controls include province fixed effects, elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and the natural log of number of registered voters in the given election year.

(a) Share of votes cast for Islamist parties in 1991

(b) Share of votes cast for Islamist parties in 1995

(c) Share of votes cast for Islamist parties in 1999

(d) Share of votes cast for Islamist parties in 2002

(e) Share of votes cast for Islamist parties in 2007

(f) Share of votes cast for Islamist parties in 2011

Figure B7: POLITICAL OUTCOMES FOR ARMENIAN VILLAGES:
FLEXIBLE PARAMETRIC VILLAGE-LEVEL ANALYSIS (POPULATION CONTROLS INCLUDED)

Notes: Point estimates and confidence intervals at 95% from OLS estimates. The sample is restricted to the treatment sample shown in Figure 3. Muslim villages that are within 20 to 25 kilometers of former Armenian villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The horizontal axis represents distance to former Armenian villages. The vertical axis represents share of votes cast for Islamist parties normalized by the sample mean in the given election year. Controls include elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and the natural log of number of registered voters in the given election year. Population controls include share of females and share of population aged over 65 in the village.
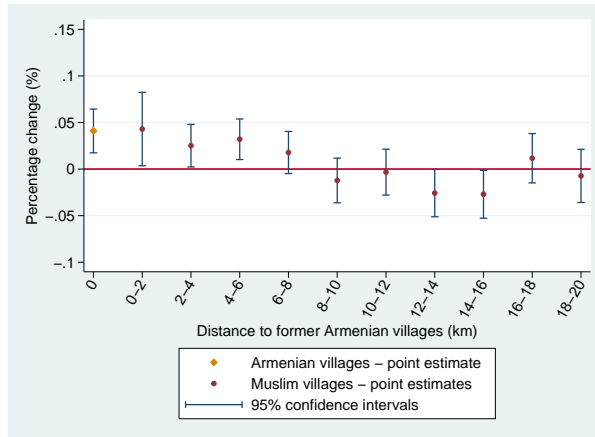
(a) Literacy rate in 1985
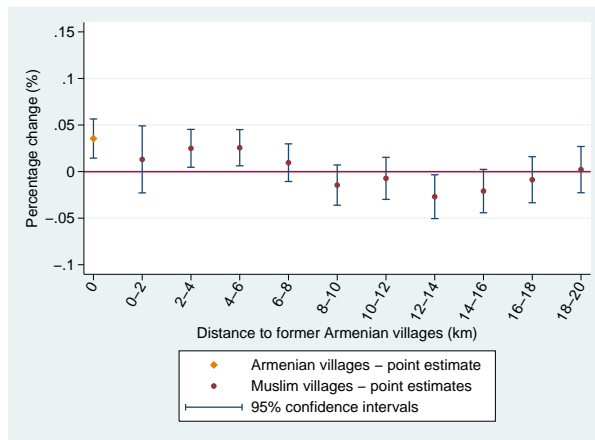
(b) Literacy rate in 1990
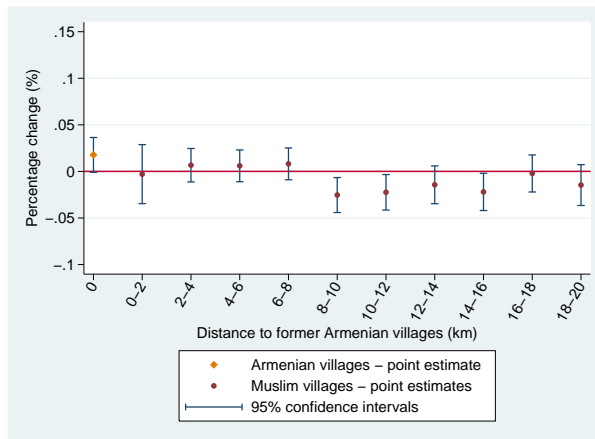
(c) Literacy rate in 2000

Figure B8: EDUCATION OUTCOMES FOR ARMENIAN VILLAGES:
FLEXIBLE PARAMETRIC VILLAGE-LEVEL ANALYSIS

Notes: Point estimates and confidence intervals at 95% from OLS estimates. The sample is restricted to the treatment sample shown in Figure 3. Muslim villages that are within 20 to 25 kilometers of former Armenian villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The horizontal axis represents distance to former Armenian villages. The vertical axis represents literacy rate normalized by the sample mean in the given census year. Vector of controls include elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and the natural log of population in the given census year.
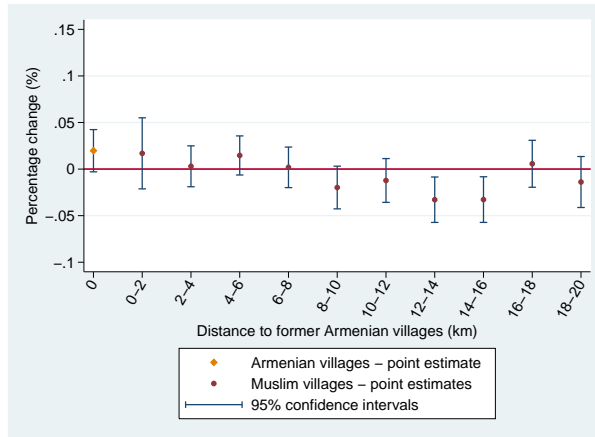
(a) Literacy rate in 1985
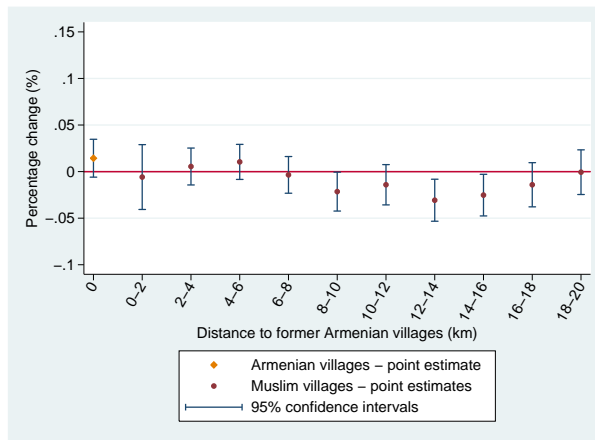
(b) Literacy rate in 1990
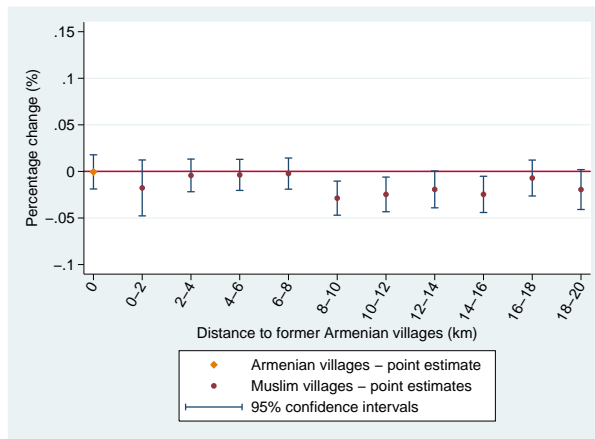
(c) Literacy rate in 2000

Figure B9: Education Outcomes for Armenian Villages:
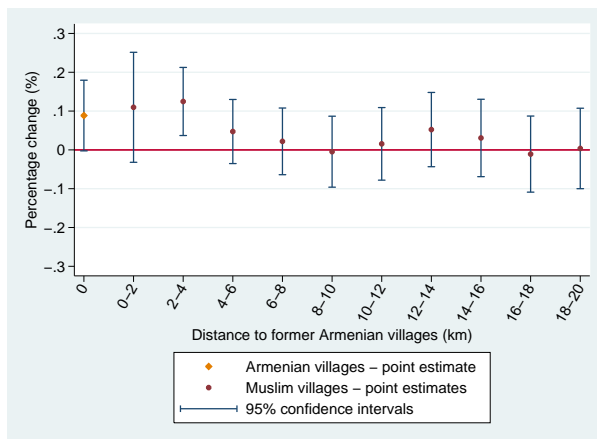Flexible Parametric Village-Level Analysis (Population Controls Included)

Notes: Point estimates and confidence intervals at 95% from OLS estimates. The sample is restricted to the treatment sample shown in Figure 3. Muslim villages that are within 20 to 25 kilometers of former Armenian villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The horizontal axis represents distance to former Armenian villages. The vertical axis represents literacy rate normalized by the sample mean in the given census year. Controls include elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams,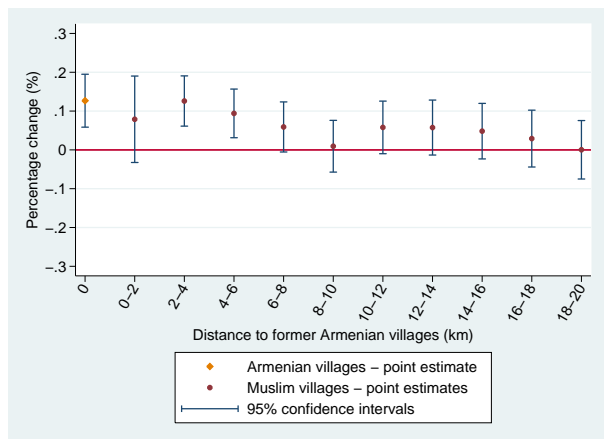 and the natural log of population in the given census year. Population controls include share of females and share of population aged over 65 in the village.
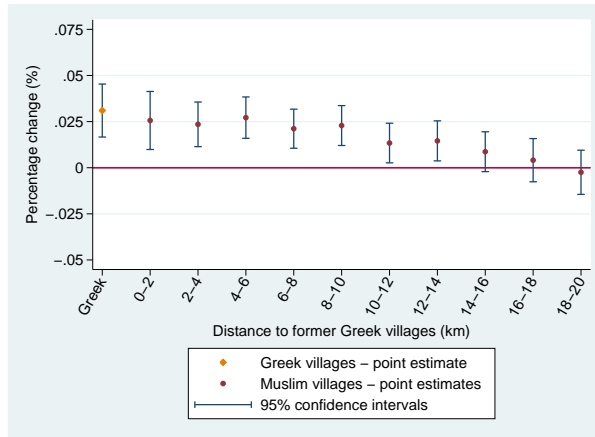
(a) Literacy rate in 1985
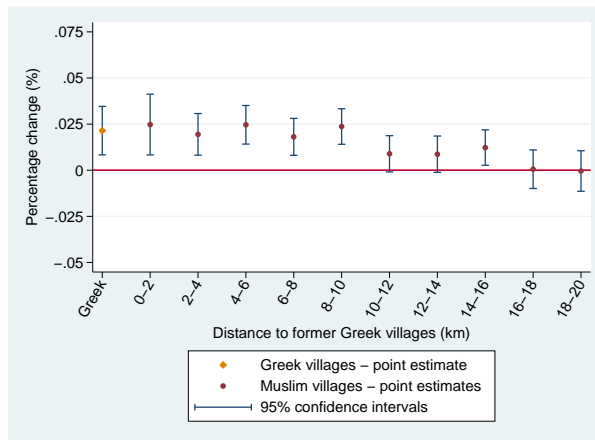
(b) Literacy rate in 1990
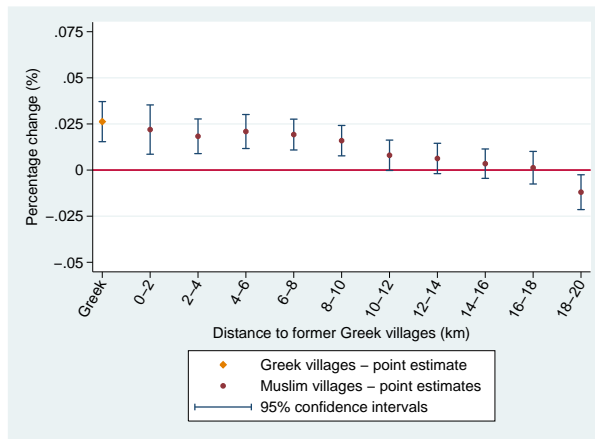
(c) Literacy rate in 2000

Figure B10: EDUCATION OUTCOMES FOR GREEK VILLAGES:
FLEXIBLE PARAMETRIC VILLAGE-LEVEL ANALYSIS

Notes: Point estimates and confidence intervals at 95% from OLS estimates. The sample is restricted to region of Greek settlements shown in Figure 10. Muslim villages that are within 20 to 25 kilometers of former Greek villages are the comparison group. Heteroskedasticity-robust standard errors are reported. The horizontal axis represents distance to former Greek villages. The vertical axis represents literacy rate normalized by the sample mean in census year t. Controls includes elevation, suitability indices for wheat, olive, and cotton cultivation, travel distances to the nearest province and district centers, travel distances to the nearest rivers and streams, and the natural log of population in census year t.

(a) Number of birth given

(b) Number of alive children
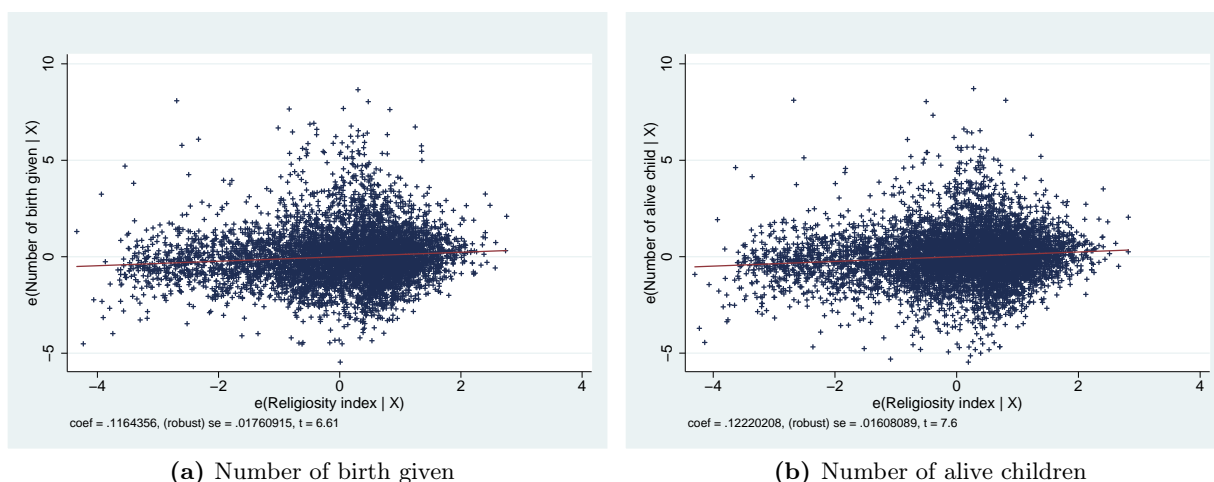
Figure B11: CORRELATION BETWEEN FERTILITY AND RELIGIOSITY

Notes: Partial regression plots from OLS estimates. TDHS2008 sample of ever-married women (age 15-49). The horizontal axis represents residuals obtained from regressing composite religiosity index on covariates. The vertical axis represents residuals obtained from regressing dependent variable on covariates. Covariates at the individual level include age fixed effect and native language of the individual, whether a dummy variable indicating whether she lives in an urban area. Covariates at the province level include geographical-region fixed effects, the Greek share in 1914, imputed Kurdish share in 1914, travel distance to Istanbul, travel distance to the eastern border, travel distance to the coast, a dummy variable indicating whether the district was the central district of the province in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean altitude and latitude of the district, and mean suitability indices for wheat, olive, and cotton production.

Figure B12: Correlation between Literacy and Migrant Share in 1945

Notes: Partial regression plots from OLS estimates. Unit of analysis is district. Standard errors are clustered at the administrative level of 1914. The horizontal axis represents residuals obtained from regressing the literacy rate in 1945 on covariates. The vertical axis represents residuals obtained from regressing the migrant share in 1945 on covariates. Covariates include geographical-region fixed effects, the Greek share in 1914, imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the eastern border, travel distance to the coast, a dummy variable indicating whether the district was the central district of the province in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean altitude and latitude of the district, and mean suitability indices for wheat, olive, and cotton production.

(a) With outliers

(b) Without outliers

Figure B13: Correlation between Primary School Completion Rate in 2000 & Land Inequality in 1997

Notes: Partial regression plots from OLS estimates. Unit of analysis is district. Standard errors are clustered at the administrative level of 1914. The horizontal axis represents residuals obtained from regressing the primary school completion rate in 2000 on covariates. The vertical axis represents residuals obtained from regressing the land gini index in 1997 on covariates. Covariates include geographical-region fixed effects, the Greek share in 1914, imputed Kurdish share in 1914, travel distance to Istanbul, travel distance to the eastern border, travel distance to the coast, a dummy variable indicating whether the district was the central district of the province in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean altitude and latitude of the district, and mean suitability indices for wheat, olive, and cotton production.

Table B1: DESCRIPTIVE STATISTICS: HISTORICAL POPULATION

	N	mean	sd	min	max
Panel A: Historical Population Data					
Total population in 1914	335	44,883	29,324	4,175	211,013
Armenian share in 1914 (%)	335	6.8	10.4	0	65.5
Greek share in 1914 (%)	335	8.3	15.4	0	98.6
Jewish share in 1914 (%)	335	0.4	1.4	0	13.3
Muslim share in 1914 (%)	335	83.3	17.2	1.4	100
Total population in 1927	335	37,431	27,827	3,356	205,359
Armenian share in 1927 (%)	335	0.1	0.5	0	6.2
Greek share in 1927 (%)	335	0.2	0.6	0	5.7
Jewish share in 1927 (%)	335	0.2	0.8	0	8.4
Muslim share in 1927 (%)	335	99.4	1.9	83.0	100
- Kurdish share in 1927 (%)	335	15.8	29.9	0	99.4
- Arabic share in 1927 (%)	335	1.3	7.5	0	88.0
- Turkish share in 1927 (%)	335	80.7	31.6	0.3	100
Total population in 1935	335	44,455	32,880	6,286	236,894
Total population in 1940	335	48,351	36,354	6,261	262,940
Total population in 1945	335	50,926	39,748	6,271	310,580
Total population in 1950	335	56,705	45,562	6,297	380,266
Total population in 1955	335	64,550	56,927	6,829	557,383
Panel B: Geographical and Historical Controls					
Population density in 1914	335	26.9	25.3	2.0	317.8
Province center in 1914	335	.19	.39	0	1
Within one and a half days distance from the ports	335	.04	.19	0	1
Had access to railways network in 1914	335	.22	.42	0	1
Travel distance to Mt. Ararat (days)	335	27.4	12.5	1.2	48.6
Travel distance to Constantinople (days)	335	9.9	6.0	0.7	26.3
Travel distance to the coast (days)	335	4.7	4.1	0.1	19.2
Travel distance to the eastern border (days)	335	12.9	7.9	0.1	30.6
Rivers' length (km/100 sq-km)	335	0.9	1.4	0	7.0
Streams' length (km/100 sq-km)	335	1.2	1.6	0	7.0
Latitude (decimal degrees)	335	39.2	1.4	36.3	41.9
Altitude (m)	335	989.9	570.1	49.2	2507.6
Suitability index for wheat	335	34.3	14.3	2.9	84.5
Suitability index for cotton	335	6.8	8.5	0	41.0
Suitability index for olive	335	12.3	13.3	0	55.1
Mean annual temperature (°C)	335	11.2	3.2	3.8	18.5
Mean annual precipitation (mm)	335	616.5	168.1	312.5	1667.8

Notes: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

Table B2: Descriptive Statistics: Historical Population (TDHS Sample)

	N	mean	sd	min	max
Panel A: Historical Population Data					
Armenian share in 1914 (%)	6,559	9.2	8.4	0.0	40.2
Greek share in 1914 (%)	6,559	7.3	10.1	0.0	37.8
Jewish share in 1914 (%)	6,559	0.5	1.0	0.0	5.3
Muslim share in 1914 (%)	6,559	81.6	11.3	51.2	99.1
Armenian share in 1927 (%)	6,559	0.1	0.3	0.0	1.3
Jewish share in 1927 (%)	6,559	0.2	0.3	0.0	1.4
Greek share in 1927 (%)	6,559	0.3	0.8	0.0	4.0
Muslim share in 1927 (%	6,559	99.0	2.0	78.7	100.0
- Kurdish share in 1927 (%)	6,559	15.3	25.4	0.0	82.9
- Arabic share in 1927 (%)	6,559	1.6	4.9	0.0	34.6
- Turkish share in 1927 (%)	6,559	80.7	27.3	1.3	100.0
Panel B: Geographical and Historical Controls					
Population density in 1914	6,559	25.4	16.7	6.0	72.2
Within one and a half days distance from the ports	6,559	0	0.1	0	0.4
Had access to railways network in 1914	6,559	0.2	0.2	0	0.7
Travel distance to Mount Ararat (days)	6,559	25.7	12.0	3.2	46.9
Travel distance to Constantinople (days)	6,559	10.7	6.0	0.6	25.9
Travel distance to the coast (days)	6,559	4.9	4.0	0.2	18.7
Travel distance to the Eastern border (days)	6,559	11.0	7.8	0.3	28.9
Rivers' length (km/100 sq-km)	6,559	.9	.9	0	3
Streams' length (km/100 sq-km)	6,559	1	.74	0	3.7
Latitude (decimal degrees)	6,559	39.0	1.4	36.7	41.7
Altitude (m)	6,559	999.7	537.6	102.2	2294.9
Suitability index for wheat	6,559	36.4	11.8	4.3	64.2
Suitability index for cotton	6,559	7.4	7.8	0	28.2
Suitability index for olive	6,559	12.2	11.6	0	51.5
Mean annual temperature (°C)	6,559	11.2	3.1	4.7	16.7
Mean annual precipitation (mm)	6,559	607.6	157.2	361.4	1404.4

Notes: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

Table B3: DESCRIPTIVE STATISTICS: CONTEMPORARY OUTCOMES

	N	mean	sd	min	max
Panel A: Contemporary Development Outcomes					
Literacy rate in 1985 (%)	594	73	12	29	92
Primary school completion rate in 1985 (%)	594	53	13	13	80
Literacy rate in 1990 (%)	833	76	11	18	94
Primary school completion rate in 1990 (%)	833	59	12	10	83
Literacy rate in 2000 (%)	853	84	8.4	40	97
Primary school completion rate in 2000 (%)	853	61	11	15	85
Poverty rate in 2011 (%)	880	17	16	.78	84
Share of self-employed in 1985 (%)	594	24	4.4	8.6	38
Share of self-employed in 1990 (%)	833	25	4.9	3.8	44
Share of self-employed in 2000 (%)	853	25	6	3.4	41
Share of male pop. with profession in industry in 1985 (%)	594	20	9.9	4.9	68
Share of male pop. with profession in industry in 1990 (%)	833	17	9.1	2.6	61
Share of male pop. with profession in industry in 2000 (%)	853	24	8.4	2.2	52
Share of male pop. with profession in commerce in 1985 (%)	594	2.8	1.3	.32	8.6
Share of male pop. with profession in commerce in 1990 (%)	833	3.3	1.8	.28	11
Share of male pop. with profession in commerce in 2000 (%)	853	2.9	1.4	.36	10
Land gini in 1997	851	.69	.093	.037	.97
Panel B: Political and Religiosity Outcomes					
Share of votes cast for Islamist parties in 1973 (%)	587	12	9.7	.19	66
Share of votes cast for Islamist parties in 1977 (%)	587	9.3	8.7	.13	75
Share of votes cast for Islamist parties in 1991 (%)	833	18	12	.53	60
Share of votes cast for Islamist parties in 1995 (%)	848	22	13	.78	72
Share of votes cast for Islamist parties in 1999 (%)	851	16	11	.81	63
- Share of votes for FP in 1999 (%)	851	15	9.7	.53	58
- Share of votes for BBP in 1999 (%)	851	1.7	2.2	.13	30
Share of votes cast for Islamist parties in 2002 (%)	853	37	17	3.4	94
- Share of votes for AKP in 2002 (%)	853	34	16	2.8	94
- Share of votes for SP in 2002 (%)	853	2.4	2.6	0	23
- Share of votes for BBP in 2002 (%)	853	1.2	1.8	0	26
Share of votes cast for Islamist parties in 2007 (%)	853	51	16	4.1	90
- Share of votes for AKP in 2007 (%)	853	48	16	3.7	87
- Share of votes for SP in 2007 (%)	853	2.2	2	.064	14
Share of votes cast for Islamist parties in 2011 (%)	880	55	17	5.8	93
- Share of votes for AKP in 2011 (%)	880	53	16	4.8	92
- Share of votes for SP in 2011 (%)	880	1.3	1.2	0	11
- Share of votes for BBP in 2011 (%)	880	.79	.71	.091	8.5
Religiosity index	6,559	3.7	1.1	0	4.5
Performs namaz regularly	6,559	.52	.5	0	1
Fasts regularly	6,559	.89	.31	0	1
Performs namaz at all	6,559	81	39	0	100
Fasts at all	6,559	94	23	0	100

Notes: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

Table B4: Descriptive Statistics: Historical Outcomes

	N	mean	sd	min	max
Panel A: Historical Education Outcomes					
Literacy (in Arabic script) in 1927 (%)	366	7	5.3	.23	38
School per 1000 school age kid in 1927	365	4.7	3	0	21
Literacy (in Latin alphabet) in 1945 (%)	430	20	11	2.1	61
School per 1000 school age kid in 1945	430	4.8	2.9	.22	16
Panel B: Historical Profession Outcomes					
Share of male pop. with profession in industry in 1927 (%)	366	2.9	2.4	0	17
Share of male pop. with profession in commerce in 1927 (%)	366	2.3	1.8	0	15
Share of male pop. with profession in industry in 1945 (%)	59	7.6	4.6	.9	30
Share of male pop. with profession in commerce in 1945 (%)	59	3	1.3	.7	8.5
Panel C: Migration and Fertility Outcomes					
Migrant share in 1945 (%)	59	10	9	1.2	39
Median age in 1945	59	18	1.5	15	20
Number of 0-9 age kids per 100 reproductive woman in 1945	59	132	20	95	179

Notes: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

Table B5: Descriptive Statistics: Village-Level Data

	N	mean	sd	min	max
Panel A: Linguistic Origin of Former Village Names					
Armenian village	34,254	.033	.18	0	1
Greek village	34,254	.021	.14	0	1
Kurdish village	34,254	.071	.26	0	1
Arabic village	34,254	.004	.06	0	1
Panel B: Contemporary Political Outcomes					
Share of votes cast for Islamist parties in 1991 (%)	32,042	18	19	0	100
Number of registered voters in 1991	32,042	281	224	3	2950
Share of votes cast for Islamist parties in 1995 (%)	32,789	23	22	0	100
Number of registered voters in 1995	32,789	254	206	3	3100
Share of votes cast for Islamist parties in 1999 (%)	32,943	17	19	0	100
- Share of votes cast for FP in 1999 (%)	32,943	15	18	0	100
- Share of votes cast for BBP in 1999	32,943	1.8	4.4	0	99
Number of registered voters in 1999	32,943	246	206	1	2283
Share of votes cast for Islamist parties in 2002 (%)	34,794	37	27	0	100
- Share of votes cast for AKP in 2002 (%)	34,794	34	25	0	100
- Share of votes cast for SP in 2002 (%)	34,794	2.3	5.8	0	100
- Share of votes cast for BBP in 2002 (%)	34,794	1.3	3.5	0	93
Number of registered voters in 2002	34,794	258	258	1	22676
Share of votes cast for Islamist parties in 2007 (%)	34,186	53	27	0	100
- Share of votes cast for AKP in 2007 (%)	34,186	51	27	0	100
- Share of votes cast for SP in 2007 (%)	34,186	2	4	0	100
Number of registered voters in 2007	34,186	249	218	1	6188
Share of votes cast for Islamist parties in 2011 (%)	34,224	58	28	0	100
- Share of votes cast for AKP in 2011 (%)	34,224	56	28	0	100
- Share of votes cast for SP in 2011 (%)	34,224	1.2	2.4	0	67
- Share of votes cast for BBP in 2011 (%)	34,224	.7	1.8	0	62
Number of registered voters in 2011	34,224	239	245	2	10516
Panel C: Contemporary Development Outcomes					
Literacy rate in 1985 (%)	30,981	56	15	.24	94
Population in 1985	30,981	553	462	51	12976
Literacy rate in 1990 (%)	31,368	67	14	0	100
Population in 1990	31,368	426	397	51	7484
Literacy rate in 2000 (%)	31,272	60	15	1.3	98
Population in 2000	31,272	525	463	51	11597
Panel D: Geographical Controls					
Travel distance to the nearest province center	33,884	1.5	.79	0	5.5
Travel distance to the nearest district center	33,894	.46	.26	0	2.4
Travel distance to the nearest river	33,602	1.7	1.5	0	7.6
Travel distance to the nearest stream	33,777	1	.73	0	4.5
Altitude (m)	33,899	903	569	0	3020
Suitability index for wheat	33,966	37	20	0	100
Suitability index for olive	33,966	12	17	0	85
Suitability index for cotton	33,966	7.1	11	0	55

Table B6: OLS RESULTS

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Islamist vote share between 1973 and 1995						
Armenian share in 1914	0.348***	0.262***	0.247***	0.241***	0.177***	0.159***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Observations	2,348	2,348	2,348	2,348	2,348	2,348
R-squared	0.0910	0.190	0.201	0.202	0.239	0.275
Panel B: Religiosity index						
Armenian share in 1914	0.0132***	0.0105***	0.0112***	0.0108***	0.00410	0.00390
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Observations	6,559	6,559	6,559	6,559	6,559	6,559
R-squared	0.0730	0.0860	0.0920	0.0940	0.102	0.107
Panel C: Primary school graduation rate in 1985						
Armenian share in 1914	-0.442***	-0.091*	-0.175***	-0.199***	-0.136***	-0.129***
	(0.07)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Observations	594	594	594	594	594	594
R-squared	0.114	0.591	0.681	0.699	0.729	0.740
Panel D: Poverty rate in 2011						
Armenian share in 1914	0.611***	0.160**	0.263***	0.180***	0.228***	0.220***
	(0.10)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Observations	880	880	880	880	880	880
R-squared	0.147	0.551	0.598	0.573	0.250	0.692
Geographical region FE		✓	✓	✓	✓	✓
Other population shares			✓	✓	✓	✓
Historical development				✓	✓	✓
Distance measures					✓	✓
Geographical endowments						✓

Notes: See notes of Table 3, Table 4, and Table 5 for controls used, respectively, in Panel A, Panel B, Panels C and D. For Panels A, C, and D: Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters. For Panel B: Residents of Istanbul, Hatay, Kars, and Artvin provinces are exluded from the sample. Standard errors are clustered at the province level; there are 77 clusters.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table B7: CONTEMPORARY POLITICAL OUTCOMES:
VOTE SHARES OF NATIONALIST POLITICAL PARTIES (1973-2011)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Nationalist vote sh. in 1973	Nationalist vote sh. in 1977	Nationalist vote sh. in 1987	Nationalist vote sh. in 1995	Nationalist vote sh. in 1999	Nationalist vote sh. in 2002	Nationalist vote sh. in 2007	Nationalist vote sh. in 2011
Panel A: IV								
Armenian share in 1914	0.00100	0.168	0.0670	-0.193**	-0.133	-0.0320	-0.108	-0.236**
	(0.078)	(0.123)	(0.044)	(0.085)	(0.128)	(0.084)	(0.101)	(0.113)
Observations	587	587	594	848	851	853	853	880
F-stat	21.44	21.44	22.07	23.54	23.57	23.87	23.87	24.17
Panel B: OLS								
Armenian share in 1914	-0.058***	-0.064*	-0.00100	-0.082***	-0.133***	-0.0330	-0.087**	-0.0390
	(0.019)	(0.034)	(0.014)	(0.028)	(0.048)	(0.028)	(0.035)	(0.031)
Observations	587	587	594	848	851	853	853	880
R-squared	0.293	0.505	0.503	0.433	0.562	0.315	0.550	0.550
Panel C: Reduced Form								
Distance to Mt. Ararat	-0.00100	-0.176	-0.071*	0.202**	0.139	0.0340	0.113	0.247**
	(0.084)	(0.117)	(0.043)	(0.083)	(0.142)	(0.090)	(0.110)	(0.106)
Observations	587	587	594	848	851	853	853	880
R-squared	0.283	0.503	0.506	0.428	0.553	0.313	0.545	0.554
Mean of dependent var.	4.284	6.662	3.176	8.986	19.75	10.24	16.48	14.55
s.d. of dependent var.	4.484	6.195	2.934	5.797	10.49	5.953	8.353	7.636

Notes: Controls include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, a dummy variable indicating whether the district was the province center in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, a dummy variable indicating whether the district is within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters.

*** p < 0.01, ** p < 0.05, * p < 0.1

Table B8: Religiosity Outcomes Robustness: Wearing a Headscarf, Performing Namaz, Fasting (TDHS 2008)

DEPENDENT VARIABLE	(1) Religiosity index	(2) Performs *namaz* regularly	(3) Fasts regularly	(4) Performs *namaz* at all	(5) Fasts at all
Panel A: IV					
Armenian share in 1914	0.0317***	1.1895**	0.6634***	0.8136***	0.3528**
	(0.0116)	(0.5195)	(0.2545)	(0.2850)	(0.1605)
Alevi share proxy	-0.0662***	-2.0744**	-1.2408***	-2.2836***	-0.7739***
	(0.0187)	(0.8819)	(0.3636)	(0.6216)	(0.2147)
Religious monuments per 1000 km^2	0.0740*	3.2332*	1.3639*	1.431	1.0203**
	(0.0392)	(1.8301)	(0.7086)	(1.3988)	(0.4399)
Seljuk Sultanate territory	0.2662*	6.053	6.3147**	6.366	5.1716***
	(0.1440)	(6.4518)	(2.6405)	(4.1112)	(1.7795)
Observations	6,559	6,559	6,559	6,559	6,559
F-stat	20.26	20.26	20.26	20.26	20.26
Panel B: OLS					
Armenian share in 1914	0.0080*	0.201	0.2005**	0.2765**	0.0779
	(0.0041)	(0.1830)	(0.0944)	(0.1084)	(0.0589)
Alevi share proxy	-0.0495***	-1.3737**	-0.9128***	-1.9030***	-0.5791***
	(0.0142)	(0.6419)	(0.2803)	(0.5413)	(0.1996)
Religious monuments per 1000 km^2	0.0578*	2.555	1.0463*	1.062	0.8317*
	(0.0342)	(1.5715)	(0.6072)	(1.3331)	(0.4189)
Seljuk Sultanate territory	0.128	0.276	3.6102**	3.229	3.5655**
	(0.1006)	(4.5173)	(1.7331)	(3.3497)	(1.4409)
Observations	6,559	6,559	6,559	6,559	6,559
R-squared	0.111	0.118	0.0660	0.0890	0.0480
Panel C: Reduced Form					
Distance to Mt. Ararat	-0.0494***	-1.8541***	-1.0341***	-1.2681***	-0.5500***
	(0.0120)	(0.5457)	(0.3047)	(0.3316)	(0.2016)
Alevi share proxy	-0.0528***	-1.5697**	-0.9594***	-1.9385***	-0.6242***
	(0.0130)	(0.6148)	(0.2593)	(0.5243)	(0.1828)
Religious monuments per 1000 km^2	0.0606*	2.7301*	1.0833*	1.086	0.8711**
	(0.0314)	(1.4734)	(0.5510)	(1.2974)	(0.3927)
Seljuk Sultanate territory	0.0639	-1.547	2.076	1.169	2.9173**
	(0.0920)	(3.8727)	(1.7463)	(3.1592)	(1.4154)
Observations	6,559	6,559	6,559	6,559	6,559
R-squared	0.114	0.120	0.0680	0.0900	0.0490
Mean of dependent var.	2.675	51.50	89.25	80.76	94.48
s.d. of dependent var.	1.116	49.98	30.98	39.42	22.84

Notes: TDHS 2008 sample of ever-married women (age 15-49). The variation in the Armenian share in 1914 is at the province level. Controls at the individual level include age fixed effect and native language of the individual, whether a dummy variable indicating whether she lives in an urban area. Controls at the province level include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of districts in the province that had access to the railway network in 1914, share of districts in the province that were within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Residents of Istanbul, Hatay, Kars, and Artvin provinces are exluded from the sample. Standard errors are clustered at the province level; there are 77 clusters.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table B9: DISTRIBUTION OF PROFESSIONS (1927-1945)

DEPENDENT VARIABLE	(1) Share of industry in 1927 (district)	(2) Share of industry in 1927 (province)	(3) Share of industry in 1945 (province)	(4) Share of commerce in 1927 (district)	(5) Share of commerce in 1927 (province)	(6) Share of commerce in 1945 (province)
Panel A: IV						
Armenian share in 1914	-0.1312***	-0.2678***	-0.258	-0.0452*	-0.0693	0.00850
	(0.0430)	(0.1027)	(0.1661)	(0.0273)	(0.0556)	(0.0213)
Observations	366	60	59	366	60	59
F-stat	19.42	4.228	8.265	19.42	4.228	8.265
Panel B: OLS						
Armenian share in 1914	-0.0101	-0.0385	-0.00530	0.00670	0.0219	0.0158
	(0.0092)	(0.0305)	(0.0454)	(0.0078)	(0.0217)	(0.0147)
Observations	366	60	59	366	60	59
R-squared	0.426	0.725	0.511	0.477	0.760	0.716
Panel C: Reduced Form						
Distance to Mt. Ararat	0.1426***	0.2357***	0.375	0.0491*	0.0609	-0.0123
	(0.0359)	(0.0631)	(0.2455)	(0.0276)	(0.0535)	(0.0414)
Observations	366	60	59	366	60	59
R-squared	0.443	0.784	0.553	0.479	0.761	0.709
Mean of dependent var.	2.865	3.178	4.996	2.348	2.644	1.984
S.D. of dependent var.	2.354	1.556	3.307	1.808	1.324	0.961

Notes: Unit of analysis is district in columns (1) and (4) and province in columns (2), (3), (5), and (6). Controls in columns (2), (3), (5), and (6) include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, a dummy variable indicating whether the district was the province center in 1914, population density in 1914, a dummy variable indicating whether the district had access to the railway network in 1914, whether district is within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. See notes of Table 4 for controls at the province level included in columns (1) and (4). Istanbul province; Hatay province which was not part of Turkey between 1920 and 1938; and the districts that joined Turkey in 1914 are excluded from the sample. Standard errors are clustered at the administrative level of 1914; there are 335 clusters. In columns (1) and (4), heteroskedasticity-robust standard errors are reported. In columns (2), (3), (5), and (6) standard errors are clustered at the administrative level of 1914; there are 335 clusters.

*** p < 0.01, ** p < 0.05, * p < 0.1

Table B10: EDUCATION OUTCOMES: HETEROGENEOUS IMPACT BY COHORT

VARIABLE OF INTEREST	Armenian share in 1914		Islamist vote share	
	Literate	Completed Primary	Literate	Completed Primary
	(1)	(2)	(3)	(4)
Variable of interest	0.339**	0.351**	0.311*	0.336*
	(0.160)	(0.159)	(0.171)	(0.176)
Variable of interest * 1900-04 cohort	0.049	0.045	0.203*	0.134
	(0.104)	(0.076)	(0.106)	(0.082)
Variable of interest * 1905-09 cohort	-0.058	-0.027	0.013	0.042
	(0.090)	(0.068)	(0.103)	(0.075)
Variable of interest * 1910-14 cohort	-0.040	0.000	-0.038	0.007
	(0.098)	(0.075)	(0.105)	(0.083)
Variable of interest * 1915-19 cohort	-0.272***	-0.153**	-0.269**	-0.148
	(0.101)	(0.072)	(0.131)	(0.100)
Variable of interest * 1920-24 cohort	-0.351***	-0.277***	-0.378***	-0.266**
	(0.095)	(0.075)	(0.127)	(0.109)
Variable of interest * 1925-29 cohort	-0.425***	-0.349***	-0.444***	-0.347***
	(0.112)	(0.091)	(0.141)	(0.125)
Variable of interest * 1930-34 cohort	-0.474***	-0.427***	-0.404***	-0.382***
	(0.117)	(0.099)	(0.145)	(0.131)
Variable of interest * 1935-39 cohort	-0.653***	-0.610***	-0.596***	-0.558***
	(0.123)	(0.105)	(0.157)	(0.148)
Variable of interest * 1940-44 cohort	-0.636***	-0.630***	-0.515***	-0.524***
	(0.118)	(0.112)	(0.149)	(0.153)
Variable of interest * 1945-49 cohort	-0.634***	-0.660***	-0.488***	-0.542***
	(0.117)	(0.113)	(0.144)	(0.147)
Variable of interest * 1950-54 cohort	-0.568***	-0.629***	-0.380***	-0.470***
	(0.120)	(0.119)	(0.137)	(0.139)
Variable of interest * 1955-59 cohort	-0.520***	-0.598***	-0.270**	-0.377***
	(0.124)	(0.123)	(0.129)	(0.126)
Variable of interest * 1960-64 cohort	-0.487***	-0.573***	-0.203	-0.309**
	(0.133)	(0.132)	(0.132)	(0.123)
Variable of interest * 1965-69 cohort	-0.474***	-0.569***	-0.142	-0.250**
	(0.143)	(0.147)	(0.132)	(0.124)
Variable of interest * 1900-74 cohort	-0.367***	-0.448***	-0.038	-0.118
	(0.134)	(0.132)	(0.133)	(0.115)
Schools per 1000 school age children in 1927	0.890***	0.845***	0.944***	0.884***
	(0.291)	(0.293)	(0.306)	(0.324)
Observations	3,003,726	3,002,970	3,003,726	3,002,970
R-squared	0.328	0.357	0.328	0.357

Notes: OLS estimates. 5 percent microdata sample of the 1985 and 1990 censuses. Controls at the individual level include dummy variables indicating whether the respondent is female and lives in an urban area. Controls at the province level include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of districts in the province that had access to the railway network in 1914, share of districts in the province that were within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Residents of Istanbul, Hatay, Kars, and Artvin provinces are exluded from the sample. Standard errors are clustered at the province level; there are 77 clusters.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table B11: Fertility: Median Age, Kids per Reproductive Women (1945), Number of Birth and Alive Child (TDHS 2008)

VARIABLES	Median age in 1945 (1)	Kids aged 0-9 per 100 repr. women in 1945 (2)	Number of alive birth in 2008 (3)	Number of alive child in 2008 (4)
Panel A: IV				
Armenian share in 1914	-0.132***	1.125**	0.022**	0.020**
	(0.048)	(0.461)	(0.009)	(0.008)
Observations	59	59	5,973	6,559
F-stat	8.265	8.265	20.22	20.26
Panel B: OLS				
Armenian share in 1914	-0.00700	0.217	0.00800	0.00600
	(0.020)	(0.184)	(0.005)	(0.005)
Observations	59	59	5,973	6,559
R-squared	0.831	0.884	0.468	0.450
Panel C: Reduced Form				
Distance to Mt. Ararat	0.192***	-1.633**	-0.034**	-0.030**
	(0.052)	(0.706)	(0.014)	(0.012)
Observations	59	59	5,973	6,559
R-squared	0.885	0.902	0.468	0.450
Mean of dependent var.	18.19	110.7	2.935	2.493
s.d. of dependent var.	1.491	17.42	1.939	1.801

Notes: Controls at the province level include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of districts in the province that had access to the railway network in 1914, share of districts in the province that were within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, mean suitability indices for wheat, cotton, and olive cultivation. Column (3) and (4): TDHS 2008 sample of ever-married women (age 15-49). Controls at the individual level include age fixed effect and native language of the individual, whether a dummy variable indicating whether she lives in an urban area. A reproductive woman is defined as a female between ages 15 and 44. Residents of Istanbul, Hatay, Kars and Artvin provinces are exluded from the sample. In columns (1) and (2), heteroskedasticity-robust standard errors are reported. In columns (3) and (4), standard errors are clustered at the province level; and there are 77 clusters.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B12: MIGRATION & RELIGIOSITY (TDHS 2008)

	(1)	(2)	(3)	(4)	(5)
		Province of birth		Province of childhood	
	Religiosity index	Migrant (%)	Religiosity index	Migrant (%)	Religiosity index
Panel A: Baseline controls					
Armenian share in 1914	0.00380	0.5093**	0.00370	0.4170*	0.00400
	(0.0036)	(0.2402)	(0.0038)	(0.2251)	(0.0039)
Migrant			-0.107		-0.0848
			(0.0685)		(0.0771)
Migrant * Armenian share in 1914			0.00280		0.000700
			(0.0053)		(0.0053)
Observations	6,559	6,559	6,559	6,559	6,559
R-squared	0.106	0.147	0.107	0.120	0.107
Panel B: Baseline controls + additional religiosity controls					
Armenian share in 1914	0.0080*	0.4894*	0.00810*	0.388	0.00845*
	(0.0041)	(0.2511)	(0.0044)	(0.2385)	(0.0045)
Migrant			-0.0923		-0.0701
			(0.0695)		(0.0773)
Migrant * Armenian share in 1914			0.00150		-0.000650
			(0.0054)		(0.0054)
Alevi share proxy	-0.0495***	0.316	-0.04913***	0.320	-0.04930***
	(0.0142)	(0.7891)	(0.0141)	(0.7192)	(0.0141)
Religious monuments per km^2	0.0578*	-1.337	0.05639*	-1.287	0.05690*
	(0.0342)	(2.0589)	(0.0334)	(1.9147)	(0.0337)
Seljuk Sultanate territory	0.128	0.692	0.127	-0.210	0.129
	(0.1006)	(5.3810)	(0.1031)	(5.0251)	(0.1020)
Observations	6,559	6,559	6,559	6,559	6,559
R-squared	0.111	0.148	0.112	0.120	0.112
Mean of dependent var.	3.664	28.69	3.664	26.15	3.664
s.d. of dependent var.	1.132	45.24	1.132	43.95	1.132

Notes: TDHS 2008 sample of ever-married women (age 15-49). The variation in the Armenian share in 1914 is at the province level. In columns (2) and (3) a migrant is defined as a person who is not born in her province of residence, whereas in columns (4) and (5) it is defined as a person whose residence at age 12 is different than her province of residence. Controls at the individual level include age fixed effect and native language of the individual, whether a dummy variable indicating whether she lives in an urban area. Controls at the province level include geographical-region fixed effects, the Greek share in 1914, the imputed Kurdish share in 1914, the imputed Arabic share in 1914, travel distance to Istanbul, travel distance to the coast, travel distance to the eastern border, population density in 1914, share of districts in the province that had access to the railway network in 1914, share of districts in the province that were within one-and-a-half-days of the major nineteenth century ports, length of rivers and streams normalized by surface area of the district, mean elevation and latitude of the district, and mean suitability indices for wheat, cotton, and olive cultivation. Residents of Istanbul, Hatay, Kars and Artvin provinces are exluded from the sample. Standard errors are clustered at the province level; there are 77 clusters.
*** p < 0.01, ** p < 0.05, * p < 0.1